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ON THE

REMEDIABLE EVILS

ATTENDING THE

LIFE OF THE PEOPLE,

ENGAGED IN PROFESSIONS, COMMERCE, TRADE, AND LABOUR; EMBRACING THE CAUSES OF ILLNESS AND PREMATURE DEATH; THE MORAL, SOCIAL AND COMMERCIAL EVILS ARISING FROM PROTRACTED APPLICATION TO BUSINESS, IMPERFECT VENTILATION, AND SUPPLY OF WATER, LIGHT, &c., AND SUGGESTIONS FOR AMELIORATING THE CONDITION OF THE PRODUCTIVE CLASSES; FOR A NATIONAL SYSTEM OF EDUCATION, FOR SUPERINTENDING THE INTEREST OF THE PEOPLE, AND FOR EMPLOYING AND TRAINING CRIMINALS.

BY

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PRELIMINARY SECTION.

"And (though heaven knows it is no boast to tell)
There dwelleth in us a deep sympathy,
Too often, like the stone-closed Arab well,
Seal'd from their helpless thirst whose torment it should quell."

THE insalubrity of towns, and the physical and moral condition of their inhabitants, particularly of the productive classes, are subjects which of late have commanded the attention of Government. Commissioners have been appointed to explore and report, and admirably has the work been performed. The information obtained is important alike to individuals, communities, the statesman, and the philanthropist. No one who has not read the reports of the commissioners can form any adequate conception of the amount of physical suffering, and moral depravity, in densely populated districts, in a great degree, traceable to remediable causes.

It is ascertained that, in one million of inhabitants of large towns in England, there are 7773 deaths per annum more than in the same number of inhabitants of the country. The general annual mortality in England is 22 in the 1000, or 1 in 45; but in Manchester it is 32, and in Liverpool 35 in the 1000." Certain districts in large towns are found as in the country, naturally more healthy than others; this depends upon local physical advantages, yet in towns we find that certain space for every individual and good drainage is the ruling principle of health. In some parts of London, for instance, where there is an allowance of 202 square yards for every soul, mortality is 1 in 49 annually, and in another with 102 square yards, deaths are 1 in 41, and in 32 yards the deaths are 1 in 36. Thus in the parishes of St. Giles, and St. George's Bloomsbury, the inhabitants living in squares and open streets live on the average 40 years, and the poor in the courts, alleys, and narrow streets only 17 years, that is, they live twenty three years less than the rich; and in some parts of the town they lose about 30 years as compared with the gentry, in open, well drained, and cleansed streets; death amongst the children of the latter classes not exceeding one year old is about 12 in 100, whilst amongst the poor about 50 die in 100, within the first five years.

These astounding facts are indeed harrowing, and more particularly so when we recollect that though they occur in districts surrounded by charities, we are still uncharitable in their direction: that though we pour from the golden vessels of pride, through the ostentatious subscription-columns of a newspaper, what seems to be the very milk of human kindness, we neglect the means of preventing the black stream of pestilence and death.

A large portion of all classes have their minds still impressed with the idea that death is a respecter of no person, and hurls his shafts equally and indiscriminately amongst all, but in every town figures seem to prove the reverse, and education is busily employed in removing their fallacious impressions.

The intelligent portion of society and the legislature, fortunately taking up a position in advance, have determined to remove the delusion and the evil that afflicts the people, and the imputation of indifference to the causes that curtail their life, to an extent that the public have scarcely an idea of, although such fatal districts are often surrounded by the intelligent and wealthy inhabitants who must always suffer more or less deterioration in general health, and often from death, arising from crowded districts containing all that is most offensive to the senses, most revolting to the feelings, most injurious to health, most destructive to life, and most fatal to morals; yet remediable even with economy, through the legislature enforcing certain sanatory measures, as by preventing houses being built without due regard to the principles of ventilation and space around them for the free circulation of the air, and admission of solar light to every room, together with abundant and continuous flow of water, perfect sewerage and drainage, well-paved and cleaned streets, numerous public baths and wash-houses, and places for public bathing and swimming. Bath and wash-houses with a public oven attached heated by the same fire, should be in every parish, and in number according to the proportion of the poor in the parish. The physical and moral advantages that will accrue from the facility of washing their clothes will be infinite, for it will increase the desire to change their clothes oftener, and wear better ones, and to conduct themselves morally and socially in accordance with their personal appearance: the wives will keep their dwellings clean, wholesome, and comfortable, their husbands will remain at home in the evenings and observe the same wholesome habits, together with their young family. The facility for bathing will also engender a love for personal cleanliness, and thereby ensure the important healthy functions of the skin, so essential to all, and particularly to the artizan, whose employment is often dirty and perspiration great, which if not soon removed, clogs the pores of his skin, saturates his linen and clothing, and becomes acrid, engendering disease and forming a pestilential miasma.

The high mortality of towns arises from the above causes, and from protracted labor, ill-ventilated work-shops, crowded lodgings in dirty crowded houses, without air, light, water, or sewers. The category of severe and fatal diseases that emanate and revel luxuriously in filthy, low, and neglected districts, are too numerous to name, independent of the moral degradation that invariably accompanies the neglected means of public health.

The principal evils affecting the health and morals of the people which the legislature can most readily remedy, are the following. The first in degree of importance is the impure and very inefficient

supply of water intermittently doled by the monopolizing trading companies, who ought with their immense revenue and profits to supply by high pressure a continuous pure stream to each house; if this justice had been done to the public the original £100 shares in the New River Company could not be as now, worth £20,000; and the market is even looking up with them. For the injustice of former days, of this and other companies to the public, it is but right that they should be enforced to lessen their future profits and increase the supply of the purest water, adequate for all sanatory purposes that may be demanded of them. The second are slaughter-houses, noxious manufactories, cess-pools, and the want of good sewers, and house-drains to communicate with them from every house. The third is the church-yard nuisance, amongst the living, that continuously vomit forth pestilence and death, more particularly in some soils where the decomposition is very slow, as in chalk, dry sand, or dry alluvial land; destruction of bodies in such earth does not take place for years, whilst in brick clay soil like that of Regent's Park the destruction is most perfect and rapid. I first observed this fact in old St. Pancras Church-yard, which is one, if not the oldest of suburban churches we have, in which yard more bodies have been interred annually for a great many years than in any other; from fifty to seventy interments is not uncommon on a Sunday, notwithstanding, the earth swallows all, and perfectly converts the animal matter into its own peculiar quality. Sometime ago as a member of a deputation from the Health of London Association to Lord Morpeth, I mentioned the importance of selecting such grounds for cemeteries, &c., as the most eligible for the purpose, as it is most ineligible and unproductive for agricultural purposes. The fourth is deficiency of solar light, the first cause of laxity of cleanly, wholesome, domestic habits in the people, and of carelessness in all matters that concern their best interest. For the removal of the noxious cause, viz. the window tax, which is daily paid by death, every philanthropist should join in petitioning government, because the poor when once initiated into dark residences, sink to worse, amidst the haunts of disease and vice, in dark, close, filthy back courts, alleys, yards, and streets. Respectable married women accustomed to cleanly habits in service, or otherwise, through defects of their dwellings, at first despair of keeping their places comfortable, then relax in exertions to advance, or even to retain their social position; the husband becomes disgusted, spends his evenings from home, habits of drinking and quarrelling ensue; the children become neglected—all fall into vicious habits, the parents from their irregularities probably die prematurely with some of their children, and the rest living, weak in health, and adepts in crime, become eventually a tax upon capital and industry, as their parents were before during their illness.

The consequent expenses of national neglect in the first instance of the condition of the residences of the poor, accumulate to a greater sum than would have been required for the prevention

of the evil, an evil which alike injuriously affects the rich, therefore, it is incumbent upon all to aid in bringing forth a national law for the better protection of the indigent, both as a matter of duty and true economy.

The importance of pure air to come in contact with the blood in the lungs, is striking, when we consider that an adult breathes about 20 times in each minute (and infants much oftener) or 28,000 times in a single day and night, and even oftener than this when the air is expanded by heat, or rendered impure by exhalation in confined places, when of course it becomes noxious, engendering scrofulous diseases, consumption, indigestion, nervousness, fits, insanity, cramps, bowel complaints, and finally death; principally in consequence of the blood not being (to use the language of the immortal Harvey) "sufficiently ventilated." The heart, in pure air pulsates about seventy-two times each minute, and in twenty-four hours about 120,000 times; and more in expanded, warm, or impure air, or during active bodily exertions, and children under all circumstances very much oftener. Thus the human machinery, intended by nature to last many years, is speedily injured by disease, or worn out through adventitious, though remediable circumstances, engendering depraved habits and miseries. The fact is illustrated in Mr. Owen's second report for 1845, p. 72: in Lancaster, wherein it is proved, that the factory hands die, on the average, at the age of fifteen years; the general laborers at twenty-three years; the artisans at twenty-six years; and the tradesmen at thirty years; and Mr. Neison has proved that clerks in all parts die at twenty-seven and half years. These awful facts hold too true in respect to other towns, particularly Liverpool, which is the most unhealthy town in England. Its annual rate of mortality, is 1 in 28; while in London, with a population six times as large, it is but 1 in 37: hence the mortality of a town population does not always increase in a direct ratio to the number of the inhabitants. It appears from accurate statistical observations, that 1800 people die annually in Liverpool, over and above the number that would die, if the town were as healthy, even as London; which is very far below what it ought to, or might be made. The average age at death which reach 26 years in London, and 20 in Manchester, is in Liverpool only 17 years, a striking indication of the large amount of mortality among the young; while the deaths under 5 years, are 32 per cent. in London, they are no less than 49 per cent. in Liverpool, about one half. Double the number arrive at the age of 70 in London, that do so in Liverpool; yet, in London the number is very far below some towns, and particularly amongst the country people. Vast suffering, misery, and severe illnesses may be removed by judicious expenditure of money in averting common causes of disease, instead of building hospitals to be choked with the consequences of neglect of sanatory measures.

It is proved, that in this country, some thirty thousand lives are annually unnecessarily sacrificed to these causes; besides, about eight hundred thousand unnecessary cases of sickness occur from

fever, consumption, scrofula, rheumatism, indigestion, bowel complaints, nervous pains, paralysis, &c., with all their usual attendant mental miseries. It is proved that death and sickness fall most heavily upon infants, and on heads of families from twenty to thirty years of age, just when the men have acquired efficiency in the art of their calling, therefore most useful to themselves, families, and employers.

Destitute children are now allowed to beg and steal about the streets, without education, religious knowledge, and moral example; and sooner or later detected by the police, are tried in a court of law, and committed to prison, at great expense to the county, and great inconvenience to the prosecutors, and to the juries, and finally released, morally more degraded, without character or means of support, driven to renew their former habits, and to vitiate new associates, and thus be, first and last, a much greater expense to the public, than would have been required at the early stages of life to support, educate, and teach them useful habits, and honest avocations.

I have, therefore, suggested a plan for a National system of educating the people, also for criminals; and for employing, and training them to be useful to themselves and to the public.

I have endeavoured to point out to the employers, and to the employed, the mutual advantages that will accrue to them, and to the public, by contracting the hours of business, I have also suggested for the productive classes, a plan for self-dependence, during illness or old age, by joining mutual assurance societies, or benefit clubs, upon tables founded, and guaranteed by government to fulfil their engagements, to supersede the degradation of receiving relief through the poor laws.

I will here take the opportunity of suggesting an economical plan of supplying *endowed churches* in certain districts, in the suburbs of the city of London. The want of accommodation for the people to attend Divine Service is seriously felt and lamented by them in many densely populated places. Notwithstanding the great increase of new churches, the clergymen are too few to administer religious instruction commensurate with the wants of the people; and still fewer are the adequately remunerated hard working clergy. The legislature may thus supply many districts without incurring an extra expense upon the inhabitants or the nation, or injustice or inconvenience to any party, by transferring the service of seven or eight out of every twelve of the incumbents of the rich livings in the city, where of late years they have had no scope for their energies in their all-important callings, because the habits of men of business are entirely changed; and most of the houses are converted into counting houses and warehouses, the tythe-payers and even their clerks residing with their families in private houses around the city, where they would gladly receive the religious instruction of their parochial clergy of the city, and the latter would be happier in the active service of their Divine Master than listlessly employed in the city, which

after 6 o'clock in the evening, and on Sundays, is more like a deserted town than the greatest city in the world. I have taken the opportunity of attending the churches in the city during the morning and afternoon for some time past, and found large churches and benefices with only twenty to a hundred in the morning, and less than one half in the afternoon. The permanent inhabitants of the city are not only very few compared to the proffered accommodation of the national church, but they are generally Dissenters of various denominations, Roman Catholics, and Jews; therefore condensing the duties of twelve incumbents to four or five, would only be conforming with the habits of the people, and benefit all, without at all risking over working the remaining incumbents, or the loss of the wonted incomes of the transferred clergy, whilst the public would be obtaining their services where it is wanted: thus all the city clergy with rich benefices would be employed as their predecessors were formerly, and equalize the work in and out of the city. The churches and grave-yards of the transferred incumbents might with justice be sold, and the proceeds of the valuable ground and materials, be applied to build churches in the suburbs, and houses for the incumbents attached to them; also the rich beneficies of the transferred incumbents may after the decease of the present incumbents be divided for future incumbents, not less than £500 a year with a house attached to the new church, or £600 without a house, and the patronage to remain as it is.

Many well meaning people fear that sanatory measures may induce over population, starvation, and anarchy, and instance Ireland; the fact is, Ireland is not over-populated, but overrun with ignorance of their ample means to enrich themselves, want of energy for enterprise, and inefficient or rigorously administered laws. To fear that the population can ever supersede the means of support by the product of the earth, is to deny the providence of the Creator for the fulfilment of his first commandment, "Increase and multiply." He has given intelligence to man, and capability to the earth to produce all that may be required. Doubtless, to effect all, sound and general education must be granted to the people; free-trade in all necessaries, without a single alloy of monopoly; good and cheap laws, even-handed administration and equally within the reach of the poor as the rich. In respect to the produce of our country, we know that in the time of Queen Elizabeth the produce was as inadequate to supply the wants of a comparatively very thin population, as it is now with an infinitely greater population. The produce of the land, has, and will as heretofore be increased, with the intelligence and energy of every generation for ages to come; since the economy of nature is continually developed, and seized to the advantage of man, for his necessities, convenience, and luxuries.

We find that the sewerage of towns, and waste of organic matter in a state of decomposition or putrefaction, that proves so injurious to man, by its noxious and pestilential exhalation, is however, the most efficient dressing for land, because it partakes of the nature of

he best guano, viz., a large quantity of ammonia. The inhabitants of some towns have availed themselves of the pecuniary advantage of the sale of the refuse. The sewerage of Edinburgh, for nstance, has caused land in its vicinity worth only 2s. 6d. per acre, a few years ago, to yield rent of £30, £40, and even £57, per acre. At Milan, meadows irrigated by the sewerage-water, have been rendered so fertile that they produce a crop of hay for stable feeding in November, January, March, and April: and in June, July, and August, they yield three crops of good hay; and in September and October abundant pasture. I mention these facts, to shew the productive power of land in warm and cold countries, when judiciously dressed; it is true that sewerage cannot be obtained every where, but as the constituents are known to the chemist, he will doubtless ere long manufacture them in a condensed form, for convenient transit to all parts. But in the meantime, this invaluable source of wealth and employment of the people should not be allowed to continue a mere evil, or lands undrained, unproductive, or injurious to the health of man and beast.

Agricultural science favors the health of the people, and perhaps in no place is it more marked by the operation of draining land, than in the Isle of Ely, which fifty years ago was a pestilential marsh, covered with ponds, fogs, and wilderness, and producing little corn, but now yielding abundance, with grass, hay, and above all, health to the people; for the mortality has since decreased from one in thirty-one to one in forty-seven.

Thousands of independent laborers may be employed for ages to come, in subduing wild land into profitable cultivation by the nation, or by public companies, or even by draining effectually the partially cultivated land of poor landlords, charging them rent for the improvement for a certain number of years. Thus millions of acres would be recovered or improved, to replace the loss of produce and agricultural employment upon about two millions of cultivated acres that is now, or will be used for rail-roads.

Land capable of reproductive culture, should not be allowed to remain idle, the proprietor should be enforced to recover annually a certain portion either with his own or capital borrowed from the nation, for the sake of producing food and employment for the people. Every landed proprietor, or his tenant, should make a return to the proper national authorities of all the produce of cultivated land, in corn or animals, and if below par for the character of the land, and the system of culture then in vogue, they must be enforced to employ more hands and science, in order that respectable laborers may be fully employed, and the wealth of the proprietors and the nation increased. This system adopted in England, would prevent much misery; and in Ireland with English poor-law, prevent famine and anarchy. I have suggested that criminals should only be employed in all known dangerous or degrading occupations, such as needle, file, fork grinding, wool-carding, working certain mercurial preparations, cleansing and repairing sewers, emptying cess-pools, (whilst

such things are allowed to exist,) and performing the duty of soldiers on dangerous foreign coasts, and in removing the sources of the plague, cholera-morbus, and other like duties. These and other changes the legislature may effect, with much advantage to the public, and particularly in our criminal code, for as it is, it speaks of anything rather than a christian spirit; it provides not for crimes in proportion to their moral turpitude, and the degree of injury produced on the most important interest of man; hence, we have lately had a post-man transported for ten years, for abstracting ten shillings from a letter; and a man for bigamy, only imprisoned for ten months!

Now in concluding my set task, I very sincerely beg the indulgent forbearance of the critic, as well as that of the general reader, for all errors, omissions, and imperfections of it, and that they will allow for the circumstances under which it has been written, at intervals spared from arduous professional duty, and amidst those distractions of thought which frequent interruption occasions; during which my own opinions have undergone modification, so that it is probable there will be found some positions wanting in accuracy, or stated without the qualifications with which they ought to be accompanied. Again the subjects of the work being somewhat isolated and disjointed, I fear I have failed in my editorial part of tolerably linking the various quotations with my humble views and suggestions, smoothly into a system of seeming symmetry and rational coherence, to serve that humbler portion of the productive and the employed community who are most in need, and least able to help themselves, and to elevate their health, life, morals, and social condition.

J. E. R.

73, Harley Street, London.

January 1st, 1847.

ON THE PHYSICAL EVILS OF IMPURE AIR,

AND OF

PROTRACTED HOURS OF BUSINESS, &c

SECTION 1.

To observe the Divine ordinance towards our neighbours, to love them as ourselves, tends no less to secure our own happiness than that of our fellow-creatures; the neglect, on the other hand, of our mutual duties, is an active source of a premature sacrifice of human life, and of infinite misery and poverty. Hence, the basis of our social happiness is the observance of our duty towards our neighbour; its moral influence ramifies itself into all human affairs, and reflects upon society good or evil according as it has been observed.

Since the extensive range of our duties to our neighbour cannot here be wholly considered, we shall first attempt to point out many of the remediable causes that annually, directly or indirectly, injure the health, or cause death in the vigour of life amongst the middle and lower classes of society. To prevent such calamity is not only the duty of the nation, but of every individual in it. Among other industrious advocates of the dependent, Dr. Lyon Playfair has proved that in Manchester alone no less than 3147 deaths occur annually above the proportion which occurs in other places, where mortality is at the average of the whole nation. From the above number, 1908 are persons above twenty years of age, just when the men are perfected in their calling and most serviceable to themselves, families and employers. Thus the people of Manchester lose about nineteen years of their life, supposing they had lived in a place of average mortality. To counteract this effect, it appears that in all places where more than the proper number die, more than the usual number are born, proving that indigence and debility favour procreation. In Manchester 1656 births occur above the number which is the average of the whole nation. The average mortality of children amongst the rich and poor in this country is about one in every four and a half before the end of the first year of existence. This result is very different in different towns, and parts of the same, for instance according to the last report of the Register-General for 1844 —no less than 51,110 persons died in the metropolitan districts, of whom, 20,650 or 44 per cent., were children under five years of age. In the parish of St. Margarets, Westminster, the mortality is 45 per

cent., and in some parishes it is as high as 52 per cent., in the parish of St. James Piccadilly, it is only 31 per cent., varying thus, more or less according to the openness of the parishes. In the town of Ashton-under-Lyne, the deaths of infants under five years old reach the enormous proportion of fifty-seven per cent., in Preston fifty-three per cent., in Liverpool fifty-two per cent., and in Manchester forty-eight per cent. At Preston the mortality amongst children under five years old is as follows.—Gentry eighteen per cent.; tradesmen thirty-six per cent.; operatives fifty-five per cent. In a table drawn by Mr. Cartwright it appears that mortality at Preston has greatly increased; in 1783 the average age of deaths was thirty-one years, and now it is reduced to nineteen years and a half. The infantile mortality was twenty-nine per cent., it is now increased to fifty-three per cent., the latter augmenting in proportion to the increase of population. The wages of the poor have not increased with the prices of the necessaries of life for at least the last one hundred and fifty years, consequently they have been obliged to crowd in houses, and particularly in manufacturing towns, augmenting mortality proportionally by fevers, scrofulous affections, and consumption; a fact that appears to be invariably observed more or less wherever human beings are crowded, particularly where the houses are ill supplied with pure air, water, drains, light and other conveniences and necessaries for cleanliness and dryness.

The commissioners at Ashton-under-Lyne ascertained, from five hundred married operatives, that about two out of five children died, and that the mean average duration of life among the operative classes were sixteen years, among the other classes thirty years. In Leeds, there is one district where the annual deaths are one in twenty-eight, while in another they are only one in fifty-seven. In England and Scotland no more than one in fifty-eight die every year out of the whole population, but amongst the affluent, enjoying ease and comforts, living in the country, only one in sixty-three.

The unhealthiness of large towns is proved in the first report of the commissioners for enquiring into their sanatory state. Out of forty of the largest towns in England, four only have a rate of mortality not exceeding that of the average of the country, which is in healthy districts about two per cent. Eight only of the forty towns have a rate of mortality less than two and a half per cent., while five towns have a rate exceeding three per cent.; and in one, Liverpool, the mortality has been three and a half per cent. The amount of all this is, that in a healthy district twenty out of a thousand inhabitants die annually, making the average duration of life little more than forty-one years; yet in five large towns more than thirty out of every thousand die in the same time, and the average duration of their lives is thereby reduced by one-third its natural period; a fearful sacrifice of life, since it is susceptible of very great modification. In a table of the fifth report of the Register-General (page 400) the following facts, amongst many others are noticed. The population of the metropolitan and town districts was, in 1841,

3,759,186; that of the rural districts was 3,440,591. The disproportion in the number of deaths, however, far exceeded this small disproportion in the amount of population, being 96,999 in the town districts, and only 65,575, in the rural districts, being a difference of 31,424. Now by proper sanatory precautions the mortality of towns may, doubtless, be either quite or very nearly reduced to the same rate as that of the country districts; that is, in a population of four millions in large towns, an annual saving of probably more than thirty thousand lives: a benefit which may be extended, and be participated by all parts of the country, in a proportion of more than twenty thousand for every four millions.

This vast unnecessary loss of life, together with the melancholy amount of suffering by which it is preceded, is part only of the evils resulting from faulty sanatory arrangements. Each unnecessary death of a father represents a family unnecessarily bereaved. Early orphanage, with all its risks, premature widowhood, with all its privations, are not the least of the evils it is within our power to lessen. Again, it is probable that sickness and mortality have a pretty constant ratio to each other; we have no proof of this, but it is evident that whatever diminishes the number of deaths, must produce a still greater diminution in the number of cases of sickness, in some very considerable ratio. According to Mr. Farr, the average number in England constantly ill is about three per cent. The rate of mortality in England is about 22,178 in a million, and about 30,000 are on the average constantly sick. But in the country districts, where 19,300 in the million die annually, 26,110 only will be on the above supposition, constantly sick; while in town districts, where 27,073 in the million die annually, 36,600 will be on the average constantly sick; or in populations of four millions each, there will be forty thousand more (on the average) constantly suffering from sickness in the districts of high than in those of low mortality. Supposing the average duration of cases of sickness to be about three weeks, or $\frac{3}{52}$ of a year, the number of annual cases of sickness will be according to this calculation, more than seven hundred thousand. To lessen this horrid source of physical, mental, and pecuniary suffering (from which latter a further evil is engendered) is a duty incumbent upon all.

Prevention is better than cure, is in no case so true as in that of medicine; the cure of disease, as it is called, is often only the partial removal of the evil, while its prevention is its complete avoidance. It is well known, that it rarely happens that the subject of severe disease, however complete may be his apparent recovery, escapes without some permanent injury to his constitution, which lowers the standard of his health, and adds, practically, years to his constitutional age, whilst, at the same time, it renders him prone to subsequent attacks or to analagous disorders; hence insurance offices refuse such lives, or add years to their age or premium for the increased risk.

Then, again, how often does it happen that complete recovery is

not secured by the best directed remedial treatment, but a predisposition remains to severe series of attacks, or of tormenting and protracted sufferings, rendering exertions to earn a livelihood impossible, and hence life not desirable. It is absolutely impossible to form an adequate idea of the amount of the unnecessary suffering endured by the occurrence of such a number of diseases, easily lessened by improving the condition and quantity of the food, air, and water for the people, by cultivating in the people a desire for education and knowledge, by providing convenience for them to do so, and for rational and healthful amusements in the open air, affording more tempting recreations than what may be found in gin and beer shops. Low mental acquirements, in districts where the poor are exclusively huddled together, with insufficient food, clothing, firing, and lodging, undue exposure to the inclemency of the weather, excessive labour and depression of mind, have a certain tendency to familiarize the feelings with them, and injure the body. Wherever a large mass of human beings are congregated in dirty close parts of towns, with deficient water and drainage to carry off organic matter, and for personal cleanliness, disease and death will proportionally increase. Abundance of water is as essential to support life as air; yet our poor are miserably supplied with this essential bounty of nature. In the Mechanics' Magazine, on the supply of water to Rome and London, the following observations lately appeared.

"The probable supply to the 1,000,000 inhabitants, of which Rome could at one time boast, amounted to 50,000,000 cubic feet, being equal to about fifty cubic feet for each individual. This is probably twenty times the quantity which London now receives for each of its inhabitants. How miserably insignificant do our water-works appear, and how trifling the supply they furnish to this mighty city of more than 2,000,000 inhabitants, when contrasted with the immense flood of pure water poured into old Rome by her gigantic aqueducts; and how discreditable the difference between the two capitals when we reflect on the far superior resources which modern science has placed at her command, and on the well-known fact, that through the happy constitution of the strata on which London stands, she has at her command—requiring, as it were, but the smiting of the rock to make them gush forth—boundless supplies of the purest possible water" to her much stinted and suffering people, the loss of which renders them indifferent to personal cleanliness and pure air; hence the increased rate of mortality, by fevers, consumption, scrofulous diseases, rheumatism, &c. It appears that Liverpool had lately the highest rate of mortality of any town in England. This fact is accounted for by Dr. Duncan's very excellent report, in which he states that 55,534 out of 223,054 of the inhabitants of the parish of Liverpool, in 1841, or more than one-fourth, lived in filthy, damp, ill-ventilated courts, and in addition to the one-fourth of the inhabitants who pass their existence under circumstances so unfavorable to health as those above described, we find that nearly one-tenth of

the whole number, or one-eighth of the remainder, live in underground apartments, or cellars, ill-ventilated, dark and damp, a cause of disease and death surer than any other, but which never ought to be permitted, since it might in that town be easily prevented. The commissioners observe thus: "When we find the rate of mortality four times as high in some streets as in others, and twice as high in whole classes of streets as in other classes, and further find that it is all but invariably high in those streets which are in bad condition, and almost as invariably low in those whose condition is good, we cannot resist the conclusion, that multitudes of our fellow-creatures, hundreds of our immediate neighbours, are annually destroyed for want of the most evident precaution." To purify foul air, a free circulation must be insured, otherwise it soon becomes polluted, either by the products of putrifying refuse, vegetable as well as animal, or charged with noxious emanations of living bodies, whether in the state of health or of disease, for they are injurious in either condition, though the effect of the latter is by far the most pernicious. The expense of effecting improvements to secure improved health, so urgently required, would, when divided amongst the large number to be benefitted, be perfectly insignificant: nay, when the advantage of improved health, increased energy, and prolonged life are taken into consideration, very probably a positive saving may be the result. The loss which the community now unnecessarily submit to, from the existence of removable causes of disease, shows itself in increased suffering, diminished energy, debased morality and premature decay of the victim.

The means to obtain health and strength in the people should be as carefully cultured by the legislature, as affectionate and enlightened parents would strive to secure those blessings for their children. The better the people live and are lodged, the more benevolent, moral, and healthy they are. During the late war it was satisfactorily proved that our officers suffered less from sickness than our men, and bore the fatigue, when equally shared, better than their less indulged companions. It is also well known that the French officers sustained better than their men the fatigue of the disastrous retreat of the army from Moscow. In the navy, the officers enjoy better health, and longer life than their men, resist epidemics, cholera, fevers, &c. in consequence of their food being better and more varied, their day and night rooms more airy and better ventilated. In fact, it invariably appears, that the strongest and healthiest and longest lived people are those who live in the best ventilated places, and upon the most varied, nutritious, best cooked and palatable food, and who, whilst subject to least anxieties, are agreeably and actively employed; whilst contrary circumstances induce reverse and disastrous effects. We are well assured that the want of good ventilation is far more destructive to the health and life of the people than any other cause in civil life, and indeed we may add, without fear of contradiction, that it particularly applies to our navy; for we know that in the first American war, 2,000 seamen died in one fleet through fever

caused by defective ventilation; and medical evidence proves, that mortality rages with proportionate violence in very many of our workshops. In confirmation of this fact, we may take the testimony of Dr. Guy, who carefully compared the health of two sets of men, forty in each set, working at the same occupation, the one in five small close rooms, the other in five large airy rooms. In the former, each man had 303 cubic feet of air, in the latter, each had 789 cubic feet of air. In all other respects their situation was precisely the same, and the results are thus pointed out by him.

"Of the forty occupying the small rooms, and consequently breathing a hotter and fouler air, five had had spitting of blood, six were subject to severe catarrh, six complained of indigestion, two of great debility, and one of rheumatism. On the other hand, of the forty men occupying the larger rooms, and having a purer and cooler air to breathe, only one was subject to catarrh, two to indigestion, one to pain in the chest, one to nervous symptoms, one to headache, and one had varicose veins. Not one of them had spit blood."

The air in heated crowded rooms soon becomes poisonous, and the inmates soon experience a sinking state of their bodies and mind; they have recourse to artificial stimulus that soon ends in habitual drunkenness, and leading them too often to the haunts of vice and recklessness, whilst their occupations, independent of the latter effect, render them prone to fevers, consumption, scrofula, &c.

Exposure to the evils of ill-ventilation do not rest here, for the men, with their families, sleep too often in gloomy courts, alleys and narrow streets, badly paved, and worse drained and supplied with water and light, where the stagnant fetid atmosphere becomes unfit for respiration, hence the fatal diseases, and infinite misery and crime. Since the riches of our nation depend upon the productive classes, how much it behoves the nation to secure, by every known means, their health and moral sanity, whilst it is of no less importance to themselves, since they subsist on wages earned by daily toil.

The frightful evils arising from preventible causes are little known as yet to those most concerned, the working people in towns, shut out from the fields and woods by miles of dusty roads, cooped in miserable abodes, without the free bounties of nature, air, water and light. It is the high prerogative of a civilized government, to give amply, the essential bounties of nature. The government ought compassionately to regard the people as its children, and watch over their interest with the greatest care; it ought not to countenance, by neglecting their religious and moral tuition, the means of engendering crime, and thereby morally destroying them. Under a wise sanatory administration, a high condition of the public health in towns is not impossible, in consequence of congregated number, a very fortuitous cause of advancement in civilization, since intelligence is fostered, and wealth accumulated, by concentration of the people, not by spreading them over the land. Fortunately, the nation has determined upon some principles of sanatory administration, hence we

have new laws, parks opened, preparations for healthy recreation to the towns-people, and for artistic study of plants, flowers and trees, in order that they may know there exists in nature a plenitude of harmonies for their enjoyment and health. The following extract upon Baron Liebig's theory, from the evidence of Dr. Southwood Smith, will enable us to comprehend and form an estimate of the beauty and subservient harmonious dependance of the animal and vegetable kingdoms.

"There are certain adjustments established between the physical and the organic kingdoms, and between the two great divisions of the organic kingdom, which we should do well to bear in mind, even in the most practical consideration of this matter. We know that atmospheric air is equally necessary to the life of plants and animals, but that they produce directly opposite changes in the chemical constitution of the air; the plant giving off as excrementitious that principle of the air on which the animal subsists, and living upon that part of it which the animal rejects as excrementitious; while the animal, in its turn, restores to the air the principle which constitutes the food of the plant, and subsists on that which the plant has rejected as no longer useful to it. In this manner, these two great classes of organized beings renovate the air for each other, and everlastingly maintain it in a state of purity and richness. On this beautiful adjustment depends this further principle, equally at the foundation of all rational and efficient sanatory regulations—namely, that the very refuse of the materials which have served as food and clothing to the inhabitants of the crowded city, and which if allowed to accumulate there, invariably and inevitably taint the air and render it pestilential—promptly removed and spread out on the surface of the surrounding country, not only give it healthfulness, but clothe it with verdure, and endue it with inexhaustible fertility. These are great laws of nature, which are now, well known to us, a due conformity with which would bring us health, plenty and happiness, but which we cannot disregard any more than we can disregard any other physical law without suffering, and perhaps destruction."

We perceive, with much gratification, that the people duly appreciate the beauties of the country and nature, by the returns to Parliament made of the visitors to the jewel-house in the Tower for 1845, and to Hampton Court Palace; for about 25,000 more persons visited the latter place, notwithstanding the distance, time and expense of travelling. In a manufacturing country, where new designs are continually wanted, the study of nature should be available to the artizans, in order that their patterns may be matchless in design and execution. To effect these advantages, a taste for and knowledge of nature should be cultivated and made prevalent among the artizans in the imitative arts, and more particularly where it can be brought to act conjointly with the same means, by which the physical condition is improved and disease averted.

The absence of natural beauties and pure air suffocates the vital power of genius as it does of life; hence our schools of design have been comparatively useless, and our artizans enervated and sickly, which cost finally far more than the means of prevention. The amount of misery and the expense of sickness from preventible

causes may be gathered from the evidence of Dr. Southwood Smith, that in St. George's Southwark, out of 1,467 persons who received parochial relief, 1,276 were reported to have been ill with fever; and by the returns from Bethnel Green and Whitechapel Unions, it appears that the annual cost for the relief of fever cases in those two parishes, amounted to upwards of £2,470.

By sanatory improvements we may reasonably expect that two-thirds of the excess of deaths and cases of illness may be effected. Such a diminution of deaths would be accompanied by a direct saving of the expenses annually of more than 500 premature funerals, which at the very low estimate of five pounds each, amounts to the sum of £2,500. If, as is not improbable, the sickness would be diminished in the same proportion as the deaths, there would be about 14,000 fewer cases of sickness, accompanied by a saving of about as many pounds in money. Supposing each case of sickness to last, on the average, three weeks, the loss to the family in expense for medical attendance, medicine, &c., and loss of wages of the sick, and of time of the attendants, cannot be less than the twenty-shillings already allowed. To these large items of expenses saved, must be added perhaps half of what is now expended by the public for the maintenance of widows and orphans—expenses which would not be incurred were their natural protectors not cut off by premature death. The amount of this most satisfactory saving would be about £6,000 a-year.

Since orphanage and widowhood, sickness and weak health, are the great causes of pauperism, and all these are increased by insalubrity, tending to continue a weak sickly offspring, therefore anything which shall considerably diminish insalubrity, will cause a very great diminution of pauperism, and consequent saving of poor-rates, together with the increased productive power of a more healthy population. Everything goes to prove that sanatory improvements are alike demanded by real economy and true philanthropy. We have ample proof that in this country, in less civilized ages, different parts of the country occasionally were depopulated, in consequence of total ignorance of sanatory laws, which are now known to be capable of warding off death and illness just in proportion as they are wisely applied. In fact, our experience of the blessings of increased civilization, prove that the sanatory condition of the people has undergone an actual proportionate improvement, that diseases have in number and severity, diminished. Thus the plague and epidemics that frequently occurred two hundred years ago, sweeping away the people in thousands, is now a matter of history, developing satisfactorily, that every onward step in the path of knowledge and true refinement, has a beneficial influence on the entire corporeal being of mankind.

Formerly epidemics were considered instruments of Divine wrath, to suppress population: hence, when the immortal Jenner discovered in the cow the prevention of the small-pox, priests of various denominations were not wanting to preach against,

and to persuade the people not to avail themselves of the proffered blessing, from its supposed impious tendency to frustrate the will of God; progressive civilization put an end to their cabal, and finally, silenced the Roman Catholic priests, who were the last that gave up the ridiculous idea. In these days, intelligent men cannot believe that zymotic diseases ever were in their various degrees of severity, depopulating towns and districts, as divine retribution on man. Certainly the cause of destruction was as it is now, physical, and within the power of man to remove, of which he was formerly either ignorant or neglected it. It would be as reasonable to attribute to God the thousand accidents, broken heads, limbs, &c., of the working classes, as compared with what the higher classes meet with. The latter classes, comparatively but seldom expose themselves to physical causes of danger and accidents, but when they do, they do so with more intelligence and providence than the ignorant, and too often reckless, drunken workman. Accidents are necessary consequences of ignorance of physical laws, carelessness or non-observance. Various degrees of accidents and mortality from zymotic diseases must always be in proportion to the general intelligence of the people, and the watchful care of the legislature, by appointing efficient public officers to inspect and insure the wholesomeness of districts, the safety of public buildings, houses, carriages, private and public scaffoldings, trading steamers, and sailing vessels, and all other matters wherein the safety of the people is concerned. For want of legislative superintendence thousands of cases of illness and accidents daily occur: many ignorant masters are permitted to command trading vessels, and how many now sea-unworthy ships, are allowed to go to sea, to carry wellinsured worthless goods, all purposely for destruction, to benefit scoundrels at the expense of insurance offices, and often with the sacrifice of the sailors' and passengers' lives? A writer in the *New Quarterly Review* states that the yearly average number of wrecks, as far as has been ascertained on good authority, is 600, and that of British merchants' ships alone. The average sum lost every year is reported as above two millions and a half sterling; the average of lives lost, the most melancholy part of the narration, amounts to the lamentable number of 1,500; whilst the wrecks of fifteen out of every twenty, are attributed to some incompetency on the part of the master! Surely every master of a vessel should undergo a strict examination, and be certificated as to his competency by a court of examiners appointed by government, as adopted in the Royal Navy. Every nation ought to adopt the same principle as regards commanders or masters of ships, and indeed, unite in the means for the removal of every source of calamity, as the Asiatic Cholera, the source of which has been traced to Jessore, a particular part of India, as the plague is traced to a particular part of Egypt, and partially Syria, and both parts of Turkey. Civilized nations are particularly interested in the suppression of the plague, since it has caused inconvenient sanatory regulations in many countries highly inimical to the interest

of the commercial world; therefore nations should interfere in order that the Delta, its principal source, may be purified; and all other similar sources of epidemics should be destroyed by drainage, desiccation, &c., or by a flow of water, as may be most effective or convenient. Since the political balance of Europe is upheld by preventing any country going to war without the consent of others, why may not European powers enforce Egypt, Syria, the two Turkeys, and the East India Company to apply practically the rules of public hygiene, which would for ever destroy the source of the plague, and cholera. On a late occasion, a province was an object of debate between a vassal prince and the sultan, the fire of war was nearly kindled throughout Europe, but four powers interfered, and a treaty was signed. Are not the plague and cholera morbus, those monstrous offsprings of the Delta, and Jessore, &c., a threat of perpetual warfare to the entire world? Is it not death constantly hovering over the native and foreign population? In the former case, a mere commercial interest was in question; in the latter, life of nations is at stake, and calls much more loudly for interference. European nations should not only unite to remove in their own territories the source of disease, but prevent other nations or kingdoms from compromising the health, well-being, and existence of others, by neglecting the sanatory means civilized people adopt for their comforts, according to their structural susceptibility, upon which we will make a few remarks.

SECTION II.

It is satisfactorily proved that the physical form of man is improved or debased by climate, and by his mode of living, and that his susceptibility to receive moral culture is by similar circumstances heightened or lowered. In improving the moral and intellectual as well as physical condition of the working-classes, the influence of food, air, and exercise, will soon be discovered to possess a degree of importance of which at present scarcely a suspicion is entertained —mere intellectual cultivation will fail to produce its full beneficial results till the organism by which the mind operates, be itself improved by a treatment in harmony with its own constitution. It is fully established that a human family, tribe, or nation, is liable in the course of generations to be either advanced from mean form to a higher one, or degraded from a higher to a lower one by the influence of the physical and moral conditions in which they exist. The coarse features, and other structural peculiarities of the negro race, only continue while these people live amidst the circumstances usually associated with barbarism. In a more temperate clime, and higher social state, the face and figure become greatly refined. The few African nations which possess any civilization, exhibit forms approaching the European; when the same people

in the United States of America have enjoyed an in-door life for several generations, they assimilate to the whites amongst whom they live. On the other hand, there are authentic instances of a people originally well formed and good looking, brought by imperfect diet, and a variety of physical hardships, to a meaner form. It is remarkable that prominence of the jaws, a recession and diminution of the cranium, and an elongation and attenuation of the limbs, are peculiarities always produced by these miserable conditions; for they indicate an unequivocal retrogression towards the type of the lower animals. Thus we see nature alike willing to recede and to advance. Both effects are simply the result of the operation of the law of development in the generative system. "Give good conditions, it advances; bad ones, it recedes. Therefore it is the duty of every civilized nation, and every citizen to strive to ward off the latter, and aid the former conditions, by providing for the poor a generous and wholesome diet, and pure air, religious and moral examples, education, and proper leisure for rest and reflection. Thus, man, by observing certain natural laws, is favorably cultivated, physically and morally in progressive generations, into the highest and happiest condition of civilization.

It has been very frequently observed amongst poor people (particularly formerly, under the fortifications of Lisle) that families who lived in dark cellars, had a proportion of defective infants, so great, that the authorities were induced to give orders to close the cellars, by which they succeeded in putting a stop to the dire effects.

The style of living is ascertained to have a powerful effect in modefying the human figure, in the course of generations, even in its osseous structure; it is but too well illustrated amongst the poor, who undoubtedly are neither so well formed or so handsome as the higher classes. Buffon has written that coarse, unwholesome, and ill-prepared food makes the human race degenerate: further observation proves that he was right. Inferior food affects alike even other animals, therefore it is probable that the first cause of man falling into a state of barbarism was, the poor quality of his food. Long before any historical records of nations were written, we have every reason to conclude, such was the condition of the inhabitants of Europe; and indeed long afterwards, in our own country the most civilized ranks of society, the gallant knights of ancient chivalry, would now be regarded as little better than ruffians, and live coarsely in cold barren houses.

Since inferior food tends to lower the physical and moral condition of the people, it may be a state business to improve for the same reason the clothing of the people with good taste, to encourage trade: the more wholesome food is consumed and good clothes worn, the better for the farmer, manufacturer, and shopman. Good materials excite taste, and together exercise an important moral influence by producing a desire in the wearers to conduct themselves befitting their outward appearance, therefore fashion and taste, strike deeper than the mere external amelioration, and may always be regarded as

a proof of progressive civilization, as certain as inferior food and clothing, mark the reverse.

A man is designed to be social civilized being, and attains only, in that state, the greatest perfection of his form, as well as of his whole nature, a condition however always aided or retarded by the influence of the climate and the georgical feature of his locality, the soil, and nature of its produce, degree of culture as regards clearings of forest, draining, &c. The great varieties of these conditions over the globe, have been satisfactorily pointed out to have caused the variety of mankind from the Hottentot up to the English. From the same causes we find that the inhabitants of every European country have more or less their characteristic features, indeed in our own country we may observe a peculiarity in the peasants of different counties; also in the town and country people, in the field and domestic servant. The rustic servant by his solitude and want of thought and emotion often bears some analogy to the African savage; we see it accompanied by similar effects on the visage. The countenance vacant, the lips thick, the face broad and spread, and all its muscles lax and swollen. We observe that every object that impresses the senses, and every emotion that rises in the mind, affects the features of the face, the index of our feelings, and contribute to form the infinitely various countenance of man. Paucity of ideas creates a vacant and unmeaning aspect; agreeable and cultivated scenes compose the features, and render them regular and gay; wild, deformed, and solitary forests tend to impress on the countenance an image of their own rudeness. Great varieties are created by diet and mode of living. The delicacies of refined life give soft and elegant form to the features: hard fare and constant exposure to the injuries of the weather render them coarse and uncouth. The infinite attention of polished society to manners give variety and expression to the face; the want of interesting emotions leaving its muscles lax and inactive, they are suffered to distend themselves to a larger and grosser size, and acquire a soft unvarying swell that is not distinctly marked by any idea. All these characteristic effects have again many variations, according to their degrees of strength, according to their combinations with other principles, and according to the peculiarities of constitution or of climate that form the ground-work on which the different impressions are received. Thus we see that the state of society has a great effect in varying the character of mankind both in figure and intelligence, we also know that the natives of different countries and of different climes who have resided probably in many instances several thousands of years before there was any knowledge of them among civilized people, have invariably their skin of various hues from black to white, together with certain conformation of persons according to the different latitudes; we may therefore join in the very reasonable belief that those effects are the result of climate and habits, and that we sprang originally from one stock. Since the children of the blacks are born nearly white, it is another evidence that our original parents were white. It is probable that various combinations

of unfavorable circumstances succeeding one another at various periods, caused the capacities of savages to be weaker than the capacities of men in civilized society to receive mental culture and civilized habits. Coarse and meagre food has great tendency to suppress and to blunt the powers of genius: the power of the savage mind is also weakened and lies dormant through defect of examples and attention to objects to employ and excite them to action.

When savages are brought amongst civilized people they become gradually more susceptible to mental culture, and more so in every successive generation, and finally may become as perfect as Europeans; since human nature is always equally pliable in advancing or receding in civilization: hence, again it is our duty to the humble classes of our countrymen, to aid their advance in the social scale by having them well lodged, clothed, and fed; because neglect of these means and tuition, most assuredly is ever followed by retrogression. That the varieties of mankind have occurred through climate and circumstances, is further supported and satisfactorily proved to our mind by the great improvement that civilized man has wrought in the domestic animals which he either requires for food, pleasure, or convenience, whilst others are necessarily destroyed, as bears, wolves, foxes, &c. We know that some of our oxen and sheep are now four to eight times larger than they were even in Queen Elizabeth's time; the dog has been rendered capable of finding and killing game for his master; to protect, and aid him in his work, instanced in the pointer, greyhound, mastiff, and the sheep-dog. We continually see the effect of this principle of culture on the inferior animals. The figure, the color, and properties of the horse are easily changed, according to the reigning taste, or the required use, thus according to the pains bestowed on the breeding of horses, we have horses for the saddle, and horses for the draught. The influence of cultivation is no less marked on the poultry.

The products of the earth have been equally improved by attention to culture, for instance, the potato has undergone a change since its introduction to England about two hundred and fifty years ago, when it was but an insignificant plant, somewhat like the deadly nightshade, to which family it belongs, and of no external beauty, with a nauseous odour, and a juice, like its family, of a poisonous quality, with a small bitter waxy tuber, not larger than a small walnut, growing in its native land, Chili, among the crevices of the rocks, unknown to the world at large, and all but neglected by the rude natives. Since the transfer of the potato to the soil of Europe it has become an important article of human food, so much so, as to have greatly influenced the population of half the globe, and prevented the people seeking for equally prolific and good food now its prevalent disease may prove thus a great blessing.*

* Thus Dr. Gesner has already introduced a substitute, or an additional food, likely to be hereafter of great benefit, named *saa-gaa-ban;* doubtless many other varieties of food will be introduced ere long.

Of the potato there seems to have been originally but one species imported, but by culture, endless varieties are produced from the white to the black, as we observe in the human race; these varieties are produced by planting its apple-like seeds, and when once obtained, are preserved by propagation by the tubers only.

Marriage is found capable of improving the physical and moral condition of man, and its influence when confined to the same people approximates the countenance towards one common standard, as we find it in the Jews. If men in the affair of marriage were under management as some animals, physical and moral excellence might assuredly be secured. But left as this connexion is to the passions and interest of individuals, superiority is more irregular and imperfect than it otherwise might be. Superior ranks are in general the most perfect in figure and more susceptible to moral culture, from the influence of tutored moral sensibilities in prior generations. The advantages which the rich have in forming matrimonial connexions favorable to this end, is however, only for a given time.

Intermixture of rude and refined society is doubtless a great advantage to the human family, it rouses the energies of civilized states who may have fallen into luxurious, idle habits, as in the atrophied habits, and blood of the Romans improved following generations. "It is difficult to contemplate an historical spectacle of more grandeur and importance than the movement of so many races and nations adventurously precipitating themselves upon the entire face of the old civilized world; careering to and fro all around the circuit of the Mediterranean shores, as if fetched out of unknown regions, and guided by an Almighty hand, to accomplish a salutary, settled purpose in the destinies of mankind. For upon this great event the fortunes of the human race have turned. It was this transfusion of so many native and untainted elements into the languishing and dying current of Roman civilization, cemented together and controlled by the commingling influence of Christian principles, transformed the general European stock, which has divided itself into the different nations of modern times, having however from the similar circumstances of their origin many characteristics in common." It comes thus within our power, curiously to detect civilization emerging gradually from its first almost buried sources; then to see its course nobly swelling out from beneath the load and obstruction of sheer animal will, into its present broad and majestic stream; a stream which it is the duty of the more fortunate and educated members of society to guide into every dark recess of ignorance throughout the land, by applying all known principles of science for the progressive physiological development of society. Thus man, who owes his dignity and superiority, to the sovereignty of will and intellect, may not disgrace his trust—the important duty of procuring "abundance for the destitute, respectability for the degraded, usefulness for the mischievous, and happiness for all,—through the mediums of virtue for the vicious, and industry for the idle."

We shall now proceed to consider some of the various occupations

of man in civilized life, which may either injure his health or shorten his life, in order that he may avoid them, or lessen their evil tendency upon himself or his progeny.

Mr. Thackrah observes in his talented work on effects of Arts, Trades, &c., that shopkeepers are generally temperate in their diet, yet

"They injure health, not by direct attacks, not by the introduction of injurious agents, but by withholding the pabulum of life—a due supply of that pure fluid, which nature designed as food for the constitution. Be it remembered that man subsists upon the air, more than upon his meat and drink. Numerous instances might be adduced of persons existing for months and years on a very scanty supply of aliment, but it is notorious that no one can exist for an hour without a copious supply of air. The atmosphere which shop-keepers breathe is contaminated and adulterated; air, with its vital principle (oxygen) is so diminished, that it cannot fully decarbonize the blood, nor fully excite the nervous system. Hence shop-keepers are pale, dyspectic, and subject to affections of the head. They often drag on a sickly existence, die before the proper end of human life, and leave a progeny like themselves."

The merchant and manufacturer is not more fortunate, though he may appear to have a greater command of worldly comforts, Mr. Thackrah, with his usual good sense, thus tritely writes:

"Of the causes of disease, anxiety of mind is one of the most frequent and important. When we walk the streets of a large commercial town, we can scarcely fail to remark the hurried gait and care-worn features of the well-dressed passenger. Some young men, indeed, we may see, with countenances possessing natural cheerfulness and color; but these appearances rarely survive the age of manhood."

The idle man of independent fortune often places himself under not more favorable circumstances for the enjoyment of his existence and wealth, in consequence of his ignorance or negligence of the physical and moral laws by which his health and happiness is obtained and retained. Mr. Thackrah thus writes of them:

"A man supplied with food and comforts without labour and care, has constantly full opportunity of attending to health. But man is a social animal. The Creator has ordained that no individual shall live to himself, and live in happiness. A man without an object is like a tree without a leading shoot: he has not the vigour of his fellows; his strength is either dissipated in irregular pursuits, or decays from listlessness. In professions and trades the nervous system is often exhausted by excessive application; here, as frequently, it declines from the want of exertion. Need I add, that the vices which result from the want of employment, undermine the constitution, and shorten life."

Our present object, however, is to treat upon causes and circumstances that affect the life and health of persons engaged in business, because they have not, like the independent classes, equal opportunities or habits of reflecting upon collateral causes injuriously affecting them. Now the weekly bills of mortality point out that about one fourth of the causes of death depend upon the diseases of the lungs.

It has been statistically proved that consumption is much more prevalent amongst persons employed in in-door than in out-door work; and more common in men than in women, particularly those who use little exertion; and very common amongst intemperate and those who inhale dust. It is more prevalent amongst tradesmen and artisans, including labouring men, than among gentlemen. Dr. Guy writes that when consumption attacks labouring men they live longer than tradesmen do after the attack, in consequence of their habitual confinement in ill-ventilated rooms; he also states that death from consumption, of persons under 30 years of age were: tradesmen 33 per cent.; labourers in-door 37½; out-door 25 per cent.

Scrofulous disease is engendered by ill-ventilation and sedentary occupations, such as those of Shopmen, Compositors, Dreess-makers, Tailors, &c., or it is engendered in their children, although themselves, apparently, free from the disease; and generally appears in the glands, joints, eyes, ears, &c. This fact is proved by deaths in different class houses, in the first class houses it is 2·7 per cent., and in the second class houses in streets it is 2·8, and in the worse class of streets and houses it is 4 per cent.

It is an indisputable fact that wherever a large number of human beings are accumulated together, unless due and ample means be provided for the constant change and renovation of the air, a poisonous atmosphere is generated. Now 336 cubic feet of pure air is required for every individual in twenty four hours: fatal results must be the consequence when as many human beings are congregated as 12,000 on a surface of 105,000 square yards, being a ratio of 460,000 inhabitants to the square mile. The same authority, Dr. Duncan, in his evidence, asserted that it is not unfrequent in Liverpool, to find twelve or fourteen persons penned up in a room of ten or twelve feet square; and in one filthy court with an area of 150 square yards, 118 inhabitants. Carbonic acid is the product of respiration, of the secretion of the skin, and of the gaseous matters arising from the decomposition of food; and of the noxious exhalations from the cesspools, the earth, and defective drains, stagnant water, a green sulphuretted and carburetted hydrogen are generated and carried by the wind to every part of the dwellings; also to the houses of the distant neighbours, the affluent inhabitants, thus scattering the germ of disease and death alike to all. Therefore, all classes are equally interested in removing as far as possible, the source of disease and death, particularly when we know that for every case terminating fatally, a vast additional suffering from illness always accompanies in some form of fever, or rheumatism, catarrh, or endemical or epidemical scourges. It appears that about three hundred years ago, diseases were much more numerous, severe and fatal, when the towns and cultivated lands were either not at all or but very partially drained, for it was not known, that in proportion as towns, and lands are drained and woods cut down, ventilation and cleanliness duly regarded, that diseases and death are proportionally warded off and the produce of the land increased.

Government is now about taking up the subjects of sewerage, drainage, and ventilation, unquestionably the most prolific sources of physical sufferings and premature death. The admission of abundance of fresh air, water, and scavenging into every nook and corner, will ensure conditions essentially necessary for the continuance of a healthy state of the body and mind, more so probably, than abundance of food; whilst the contrary, the ill condition of the air in narrow or blind courts and alleys, will cause general debility of the system, slight fatigue inducing irritability of the mind, and a morbid craving for strong drinks, thus vicious habits are engrafted and too often continued for life. The vice of drunkenness and general recklessness of character, together with a peevish wrangling disposition, is the usual attendant upon inhabitants residing in dirty and ill-ventilated houses or parts of towns; whilst clean, airy, well-drained parts are favourable to moral habits and longevity. This fact is proved in a memoir by Mr. Chadwick, in the appendix to the Supplementary Report of the Sanatory Condition of the Labouring Population of Great Britain, page 241; it is stated "that in the Parish of St. Margaret's, Leicester, during the year 1840, the average age at death in the streets that were drained (and that by no means perfectly), was 23½ years; in the streets that were partially drained, 17½ years; in the streets that were entirely undrained, 13½ years. Though the defective drainage and cleansing was the main cause, it was doubtless not the only cause of this variation. That, however, was a year of heavy mortality, and the average age at death in that and another district during the years 1840, 1841 and 1842, was in the streets drained 25 years, in those partly drained, 21; in those not drained, 17 years."

In the First Report of the Health of Towns Commission, the Rev. J. Gray has furnished an estimate of the rate of mortality in the Town of Preston, from which it appears that the rate of mortality varies very greatly, according to the cleansing and drainage of the several districts.

Ages.	Well cleansed	Moderately drained	Badly cleansed.	Worst streets	
Under 1 year	15.5	20.8	38.3	44.4	per cent.
" 5 years	19.3	31.8	32.2	29.4	
Above 5 years	65.2	47.9	29.5	26.2	

In the same volume, Mr. H. P. Holland in his Report on the Sanatory condition of the Town of Chorlton-upon-Medlock, in Lancashire, gives the following return :—

Streets of 1st Class	1 in 46	Rate of Mortality.
,, 2nd. ,,	1 in 39	
,, 3rd. ,,	1 in 27	

That a more effective system of drainage will be attended with a diminution of mortality can hardly be doubted, after the comparative returns from drained and undrained districts. I subjoin two instances, taken at hazard from the General Sanatory Report 1842: Mr.

Crowfoot, Surgeon at Beccles, in Suffolk, reported (p. 29) to Mr. Twistleton, the assistant Poor-law Commissioner, that the two towns of Beccles and Bungay, of nearly equal population, and of nearly the same advantages of situation &c, excepting that the inhabitants of Bungay were less closely confined, presented very different results in regard to the mortality of the inhabitants. At Beccles, a system of drainage had been adopted about thirty years ago, and no open drains now exist in the place. At Bungay, on the contrary, though the opportunities for draining are equally favourable, two or three large reservoirs for refuse filth existed in the town itself, and some of its principal drains are open.

The result, as gathered from a careful examination of the registers of burials has been in accordance with theoretical calculation. Whilst Beccles has improved considerably in salubrity; Bungay has retrograded as its population has increased in number.

Years.	Beccles.	Bungay.	
1811—21	1 in 67	1 „ 69	Rate of Mortality.
1821—31	1 in 72	1 „ 67	
1831—41	1 in 71	1 „ 58	

"It may be as well to guard against the conclusion that neglect of house-drainage is only to be dreaded in towns. Single houses and small groups of cottages in the country, present, not unfrequently, instances of as perilous and disgusting character."

It is gross flattery to talk of civilization of our country, when evidence like the above has been laid before the Health Commission, that the waste of life *i. e.* remediable in England and Wales, is estimated at 30,000 a year, and necessarily accompanied by about 750,000 cases of unnecessary sickness. In the metropolis even out of a quarter of a million cases of unnecessary illness, 10,000 die annually. From the same cause of neglect of remedial means that ought to be enforced by government, is the low average age at death of the labouring class and tradesmen, as compared with the gentry, inhabiting large towns. The filth and wretchedness in which the lower classes live, corresponding with their low duration of life; the unhealthy condition of their houses and workshops, depending upon want of pure air, a current of water, and drainage; the expense incurred by the public for unnecessary sickness and premature death; the burden imposed on the rate-payers by the diseases created by the neglect of simple measures, render it as mischievous to flatter a nation as an individual to continue wrong.

I have observed very frequently whilst acting as medical officer to different medical charities, the dire consequences of workmen and their families taking up their abode in new built houses, or before dry and finished, tradesmen and others also frequently inhabit new houses long before they are fit for occupation, and suffer the same severe penalty, and frequently death. Government ought immediately to take active measures to prevent the people inhabiting new built houses until thoroughly dry. In that very useful weekly

periodical, *Chamber's Edinburgh Journal*, No. 84, New Series, the following paper, which cannot be too extensively known, will be found.

"Dr. Reidel of Berlin, in a paper of great merit and interest, has recently directed attention to the injurious influence of newly-built houses on the health and life of their occupiers. After mentioning the intimate connexion kept up between the external air and the human organization, through the medium of the skin and lungs, he refers to experience to show the slow and dangerous diseases to which inhabitants of such houses are exposed, and considers it therefore to be the duty of the sanatary police to remove or check those evils by means of prohibitory measures. It is well known that the atmosphere is composed of nitrogen, oxygen and carbonic acid, in certain definite proportions, and that less or more invisible vapour is always dissolved in it. Anything which tends to derange this moral composition must be injurious to the human system; and it is Dr. Reidel's object to show that newly-built apartments are a fertile source of such derangement. *First*, In new houses there is generally an increased proportion of water in the atmosphere which we breathe. This arises from the wooden materials, which may be too new and damp; from the stone-work, which only becomes dry after long exposure; or from the materials used for cementing the stones, and for colouring and varnishing the walls. The walls of those houses remian damp longest which have been plastered immediately after their completion, because the dried lime forms an external layer very difficult of penetration. As accidental causes, which may render houses damp, it is necessary to mention wet weather when building, damp situations, large cellars, and enclosure by other high edifices, which prevent the free access of sun and wind. *Second*, the proportion of carbonic acid is diminished by the mortar which attracts it from the air; it may also be attracted by certain colours, such as those containing acetate of copper. No direct injury would, however, be caused by the diminution of carbonic acid, as it belongs to the matters given off by the lungs and skin. *Third*, Certain deleterious ingredients, arising from the new materials, are mixed with the air. Thus particles of lime have been proved beyond doubt to exist in the atmosphere of new habitations, being suspended by the evaporation of the moisture; oils and metalic colours also more or less evaporate. Combinations of lead, copper, and arsenic are employed in the preparation of painter's colours; and many of these volatilise, and may be taken into the system. Besides these, there are different chemical exhalations from new wood, mould, fungi, and grasses, which arise and putrefy in damp habitations.

Attention has also been directed to the mould with which the furniture of newly-built houses is covered, and to the constant moisture of the clothes and linen, from which circumstances alone influences injurious to the inhabitants may be expected; for, on account of the increased humidity of the surrounding atmosphere, not only is the skin prevented from free transpiration, but it is even induced to attract more moisture. This is also the case with the lungs, and thus the composition of the blood is rendered unnatural, as may be seen in the pale face, wasted muscles, and sluggishness of all the functions which ensue. In other cases, protracted rheumatism, inflamation of the joints, contractions or paralysis, are produced. In addition, the sojourn in a damp atmosphere is a frequent cause of the development of scrofula, intermittent and

typhoid fevers, scurvy, quinsy, croop, &c. Wounds and ulcers more quickly assume an unhealthy appearance, and have a tendency to take on gangrenous inflamation. The evaporation from organic substances favours ,the production of miasmata and contagions, for in no situations did the cholera occur more frequently than in new damp habitations. The inspiration of lime-particles may dispose to diseases of the chest or apoplexy ; and there can be no doubt that the lead employed in painting the walls, volatilising at a high temperature, may produce in those who are constantly exposed to its injurious exhalations symptoms of chronic poisoning, disturbed digestion, cholic, and paralysis. Chronic poisoning may also be produced by being exposed to the evaporation of Scheele's green, from which arsenious compounds escape for a long time after it has been put on the walls. Lastly, the constant moisture of the clothes and beds, and the frequent effect on the food, cause certain injurious consequences on the constitutions of the inhabitants.

Since, then, the early occupation of newly-built houses and recently-plastered rooms causes so many diseases, and imparts to children the germs of prolonged sickness and misery, it becomes, argues Dr. Reidel, the duty of the state to prevent these evils by all possible means. The following are the measures which he considers necessary :—1. Official examination of the materials before the commencement of the building, and the enforcement of proper arrangements as regards the structure itself. Thus, in public contracts for any building to be erected in summer, the condition ought to be made, that the materials should be procured and dried during the preceding winter, and the term of completing any edifice should always be regulated according to the weather. Lead and arsenical colours for painting the walls should be entirely forbidden. 2. A house should not be inhabited before a fixed time after its completion had elapsed. Considering the different effects of situation, a house in town should remain uninhabited for a year, and in the country, where sun and air have free access, for half a year after it has been finished. Should any house be dried before the time appointed, the proprietor might request the sanatary commission to examine it, when, if sufficiently dry, it might be inhabited. 3. A commission should be appointed for the purpose of examining every newly-built house, and testifying to its soundness before it is inhabited. Austria presents evidence of the feasibility of such an arrangement. 4. Instruction of the people as regards the injuries caused by inhabiting newly-built houses, &c. and as regards the means to be taken for the purpose of counteracting these injnries.

In absence of such a commission, people ought at least to be informed of the diseases to which they are liable by exposure to such noxious evaporation; and if compelled by circumstances to submit, they ought to use the following precautions pointed out by Dr. Reidel:—Thorough drying and ventilation should not be confined to one room, but to all the adjoining rooms. Mould, fungi, &c. should be rubbed and washed off with the greatest care; fires should be frequently lighted, and the windows opened ; and muriate of lime or sulphuric acid should be put in different places to attract the moisture. To purify the air from other injurious matters, chlorine, nitric acid vapours, fumes of sulphur, evaporation of vinegar, coarsely-powdered and moistened charcoal put in different places, and other fumigations, should be resorted to. For rooms already inhabited, a solution of chloride of lime is the most proper

substance. Drawers and other furniture should not be placed too near the damp walls, and if the latter should be covered with mould, they ought to be touched with a solution of chloride of lime. In addition, warm and dry clothes must be provided, and the bed must not stand too near the walls. Straw or feather beds should be changed frequently, or exposed to the sun."

Such is an abstract of Dr. Reidel's paper, which is replete with important but too much neglected instruction. We trust, however, that the plain and convincing manner in which he has placed his views, will be the means of directing attention to an evil to which a large section of our population is continually exposed, and that government may advantageously take hints from Dr. Reidel's work, for the benefit of the people.

It has of late, fortunately, become common to open new streets, through densely crowded low parts of London, as well as in other towns, for the convenience of the public; we think that government should enact a law to direct the commissioners or proprietors of new streets, to build houses for the poor conveniently in the neigbbourhood, in certain proportion to the new or old houses; and before the latter are removed, good, convenient, airy houses well supplied with water, and good drains, water closets, &c., in order that the poor may not be compelled to crowd into as bad, or worse places than those left, to continue a tendency for development of the consequent diseases and depravity. In all houses intended for the poor, a place should be specially built for their dead, because it is their custom to keep their deceased friends in their inhabited rooms for several days, in order that the friends of the deceased may, on a Sunday, pay the last tribute of respect without losing a day's wages. Parochial or other authorities should have power to prevent the dead being kept in an inhabited room for more than a few hours, or anywhere else more than a few days, unless in a leaden well-soldered coffin.

Rail-roads, and similar works of art that will doubtless be suggested for the necessities and convenience of the people for ages to come, are equally advantageous to the capitalist, and to the people. The nation should make a law to ensure a more permanent advantage to the working people for their toil in making rail-roads, canals, buildings, manufactories, &c. It is well known that contractors will engage to excavate a certain portion of a line on some isolated part of the country, we will say for forty thousand pounds, and thereby clear or save from seven to ten thousand pounds upon the labor of the working people, and about as much more by supplying them at exorbitant charges, with inferior food and drink, and probably for bad lodgings, built by the contractors regardless of comfort, ventilation, dryness warmth, light, and supply of water, &c. The work is continued day and night, consequently the bedrooms are occupied continually by the two sets of workmen. The men are too often encouraged to spend their money in drink, since the contractors pocket the profits; thus the men are riotous, quarrel-

ling and fighting, and often go to work intoxicated and reckless of limb or life; hence many serious accidents and frequent loss of life, without however inconveniencing the contractors by interrupting the work, or becoming a charge upon their purses, for the unfortunate men are sent to their parishes, or to a hospital to be a charge on the public that might have been prevented. Applicants for work are ever ready to supply the place of lost hands, without loss of time or money, whilst for horses, or donkeys, the contractors would lose a corresponding value, always greater than that of a human being: that labor and demand find their level is not true, is verified throughout the country, and particularly in Ireland. Contractors should be compelled to supply their workmen with the best food, ale, porter, &c. at a charge less than the workmen could supply themselves, which could be easily done even with sufficient profit, by buying things in large quantities; they should also supply wholesome lodgings at a convenient distance from the work, by means of moveable houses similar to those used in our colonies, with appropriate rooms for the sick, and efficient medical attendance, together with separate apartments for the married and the single. If the married men should not be accompanied by their wives and families, care should be taken that a just portion of the men's wages should be forwarded to them, lest their wives receive no aid and declare on their respective parish funds under pretence of being deserted, &c. Police should always be present to keep order and sobriety where many working men are employed. Government should enforce employers of large bodies of men to provide wash and bath buildings in isolated parts of the country, together with temporary schools with separate apartments for male and female children. Government should allow a certain sum towards the buildings, and pay and appoint invariably the teachers, and supply books, also a library of useful books for the people.

In the school-rooms, the religious rites of the Church of England should be performed once or twice every Sunday, and the members of dissenting congregations should also use the same rooms at their convenience during the intermediate hours, and the clergy of the respective congregations should teach the children their religious duties, and explain the faith of their parents once or twice every week. By the enforcement of some such laws as these, the outlay of capital would be attended by permanent good, and a saving of needless expenses which are defrayed by parishes and counties, for want of a national system of superintending and governing the productive classes, and directing the outlay of a certain portion of their earnings. Indeed, it is but reasonable that every man in full work should provide for less propitious times, by being compelled to join a club or an insurance company. Now since government have very properly encouraged friendly societies, which favor habits of forethought and frugality in the people; it is little short of a crime to disappoint the cherished hopes of the deserving members in the hour of sickness. or the days of decrepitude, by allowing erroneously calculated tables for their guidance: hence their instability and the

rising generations seeing how their parents have been disappointed, or cheated of their provident deposits for the hour of need, refrain from subscribing.

Mr. Neison has satisfactorily demonstrated the impossibility of any permanent benefit from friendly societies on their present foundation. Considering the immense number of benefit societies that have broken down, it is lamentable to think that so little should have been done by government to ascertain the real cause, that is, the misapprehended risks to which they are subject. To foster in the people in their days of strength and health, a desire of providing a safe provision for the future, will amply repay government in incurring the expenses of correct tables, to secure and guarantee permanence of such societies at any cost for defalcation of tables. Mr. Neison says that :

"Under a scientific and amply developed system, benefit societies would, in a few years, completely remove the cause of nearly all that poverty, distress, and misery, which haunt our manufacturing towns, and fill our work-houses with the working classes of the country; but owing to the imperfect and unstable foundation on which they are at present built, instead of being a help and support to a poor man, they involve him in those difficulties for which he might otherwise have provided."

The principle of insurance is now only beginning to be comprehended: had our legislators paid one quarter the attention to the principles of just mutual insurance, that they have uselessly, not to say injuriously, to the poor laws; the expense of building unions would have been saved, and our former *prisons* would have sufficed. Every person should, by law, be compelled to pay weekly, a certain portion of his earnings to his club through his employer, who should be made answerable for so doing, and produce his receipt. All persons not able to find work, should be supplied with work by their parish, and be paid the usual, but full price for labor, always deducting the club stipend. Surely neither parishes nor individuals can fail in finding remunerable employment for the people, or at any rate manage more economically than by paying them full wages for doing nothing.

By this system, which may be made equally compulsatory on every class of society, the poor man would have a steak in his country, which he has not now, therefore an inducement to uphold the dignity of the state and his own independent position, as well as to improve it. The means of prevention of social evils should earnestly engage the attention of government rather than, as hitherto, the remedies for the neglect. No one can conceive the extent of good that would result from a comprehensive system of benefit societies, co-extensive with savings-banks, guaranteed by government against accidents, and disappointments arising from erroneously calculated tables. To find every man employment more remunerative than keeping him doing nothing, must always be an easy matter in a civilized country, and amply profitable, particularly when government or capitalists, advance money, for instance, in making rail-roads

draining bogs, making sewers to secure the refuse of towns for agricultural pursuits, or even in saving that which has hitherto been regarded as only a noxious and valueless agent, the smoke of towns. Smoke is doubtless noxious to the health of inhabitants of towns; it should therefore be changed in its character: fortunately this may be effected both with saving of health and money, since its constituents are valuable and capable of being collected, condensed, or decomposed, and saved for agricultural and other purposes; by being made to pass downwards into common smoke sewers and conveyed into convenient receptacles, as the contents of our present sewers may be conveyed; then being subjected to chemical operations, decomposed and rendered innoxious and probably very profitable.

Millions of pounds have been lost to the public, and the means of employing thousands of the people, for want of practical application of the known sciences, in the economy of saving two items in towns, refuse and smoke.

SECTION III.

The observation we have made on the dire consequences of impure air, or ill-ventilated places, naturally suggest the propriety of taking a general view of the constituents of the atmosphere, consonant with the received opinions of the most eminent chemists of the age, Liebig, Dumas, Boussingault, and others. The atmosphere consists of four distinct elementary substances, oxygen, hydrogen, nitrogen, and carbon, combined in certain proportions, which have been found to be invariable in air obtained from every region of the earth. Now to what is this extraordinary mixture throughout the whole extent of the atmosphere (its constituents being merely mixed) to be attributed? The several constituents differ in specific gravity, and hence one would suppose that they would arrange themselves in the order of their densities. The answer involves the principle of gaseous diffusion. The advantages resulting from this principle are incalculable. There are processes constantly going on around us, in which gaseous matter and vapours prejudicial in the highest degree to animal life, are unceasingly evolved: the functions of respiration, the burning of wood and coal for fuel, are attended with the conversion of free oxygen of the air into carbonic acid. By the putrefactive decomposition of animal and vegetable substances, poisonous principles, far worse than carbonic acid, are given off into the air. If the heavy carbonic acid, so copiously generated from the crowding together of multitudes of men into towns, were simply to obey the laws of gravitation, and spread itself out upon the surface in such localities; a state of things would arise absolutely unendurable: instantaneous death would be the inevitable result to the unfortunate beings who should be placed beneath such a stratum of carbonic acid. Such a state of things, however, it may be

said, and truly, is impossible. carbonic acid is freely soluble in water; the water of the sea would dissolve the gaseous stratum and so effect its total disappearance, so that man would have no reason to dread asphyxia by carbonic acid. Still, such a mode of removing the carbonic acid from the atmosphere would be fatal to vegetable life, as it is proved that plants depend, in a very great measure, upon the carbonic acid of the atmosphere for their sustenance, which acid they decompose in order to obtain carbon. The advantages resulting from this law of gaseous diffusion is equally obvious with respect to oxygen and nitrogen. If, instead of being uniformly mixed as now, whereby the chemical energies of the one become modified and, as it were diluted by the other, these two gases were to form two immense layers of unequal thickness, arranged in the order of their densities, animal existence would be entirely out of the question, an atmosphere of pure oxygen being just as fatal to life as one destitute of that element. The equable diffusion of the aqueous vapour contained in the atmosphere is no less important. In many warm countries, during a great part of the year, rain seldom or never falls, and it is only from the copious dews deposited in the night, that vegetables derive the supply of moisture required for their growth, and to sustain them by the cooling effects of evaporation, from the scorching rays of the noon-day sun.

Oxygen is by far the most active constituent of the atmosphere: it is the main-spring of life, and, forming one-fifth of the air by measuring, in order that its vast and important uses of supporting combustion and decomposing all matter, and thereby cleansing and purifying the earth, air, lakes, rivers, and the sea, from the defilements constantly poured into them from countless sources of disgusting and poisonous contamination around us, may be brought into activity.

Professional men, Merchants, Bankers, Manufacturers, Tradesmen, Clerks, Assistants, Artizans, and other employées, are too often insufficiently supplied with vital air (oxygen) and thereby suffer in health, and still more from burning gas in close rooms. Mr. Squire has published in the pharmaceutical journal for December 1844 the following important facts.

"The usual argand gas-burner consumes about five cubic feet of gas per hour, producing rather more than five cubic feet of carbonic acid, and nearly half a pint of water.

Shops using thirty lights, therefore, in an evening of four hours, produce upwards of nine gallons of water, holding in solution the noxious products of the gas.

An argand lamp, burning in a room twelve feet high, and twelve feet square, containing 1728 cubic inches of air; with closed doors and windows, produces sufficient carbonic acid, in rather more than three hours, to exceed one per cent, which is considered unfit for respiration, and when it amounts to ten per cent it is fatal to life.

A man, makes on an average, twenty respirations per minute, and at each respiration inhales sixteen cubic inches of air, of these 320 cubic inches inhaled, thirty-two cubic inches of oxygen are consumed, and twenty-five cubic inches of carbonic acid is produced."

in my late works* I have treated very fully upon the injurious effects of close warm air upon the lungs, and particularly on the injurious practice of sending consumptive patients into warm climates, where the disease is undoubtedly more common than in cold and temperate climates; testimony of this truth I have received since the publication of my works, from medical practitioners in Russia, Sweden, and other northern countries. I am proud to acknowledge my unfeigned gratification in having read in between forty and fifty medical and non-medical periodicals, most flattering commendation of my work on "Irritation of the Spinal Nerves, &c." Also on my late work on the "*Remedial Influence of Oxygen, Nitrous Oxygen, and other gases and Galvanism.*" I have had occasion to use in this work some of the views I have more fully explained in the above work for diseases arising from occupations in confined impure air. Moisture is an essential component of atmospheric air; the feeling of dampness does not depend on the quantity of moisture alone, but on the tendency of the air to deposit it, and this depends on its temperature. In warm summer weather in this country, there is more moisture in the air than in the winter, but it does not feel so damp, as the tendency to deposition is less than in the winter. The more moisture there is in the air, the larger the amount of air required for the evaporation of the insensible perspiration, and the greater the difficulty for the lungs and skin to cast off the products, which are always discharged from them. The treacly atmosphere of warm climates is warm air loaded with moisture, and deposits moisture on the body rather than relieve it by evaporation. Its injury to health is thus evident, in cold climates, the reverse happens; large quantities of moisture is carried away by condensation, and with it a proportion of carbonic acid and other impurities, leaving the residual air more pure for animal economy, an advantage of the utmost importance to man. It has been calculated that the lungs of man contain about 170 millions of air cells, presenting a surface of about thirty times as large as the surface of the skin. Impurity of the air and the deficiency of oxygen in warm close rooms, together with want of light is the cause of scrofulous and other debilitating diseases, malformation and puny development of the frame, of consumption, typhus, putrid, and other fevers, particularly amongst in-door workmen.

It cannot be too extensively known that an interruption to light is a prolific source of disease, idleness and vicious habits. Light is necessary to retain and to recover health, and its deficiency is one of the active causes of a greater number of cases of illness and death in towns, than in the country. In towns epidemical diseases are more prevalent and fatal than in the country, scrofulous affections and consumption, rheumatism, indigestion, nervousness and other debilitating diseases, and fevers are more serious and fatal than in the

* Dr. Riadore on Irritation of the Spinal Nerves as the source of Nervousness, Indigestion, &c. also on the Remedial influence of oxygen and other gases, Galvanism, Electricity, &c.

country. A deficiency of light interrupts the process of nutrition, rendering imperfect the gradual change which take place in the minute structures of the animal economy, hence in towns the ordinary height and structure of the inhabitants is less than in the country. Recruiting parties for the army have ascertained that about one young man in three or four is accepted by the examining surgeon, they are either too short, weak or narrow-chested &c. It has also been noticed that soldiers in a regiment consisting of men from large towns do not last so long as those men obtained from the country; they are also proved to have less power of continuing their species by the generation of viable progeny; for we observe that the children of town parents die in a greater proportion than those of country parents, partly from this cause, and partly from want of pure air, light, &c. Deficiency of light on organic life is strikingly manifest in the vegetable kingdom; a plant will grow even in partial darkness; but it languishes, and never attains its proper development or assumes a healthy green color, its tissue is filled with aqueous fluid, and is deficient in vital cohesion and resistance: thus we find that plants out of a conservatory freeze in cold weather much sooner than those grown in the open air. Their nutrition is defective, their vitality is low, and they, conseqently, have not the power of resisting cold which the latter possess. It has been observed by Dr. Milne Edwards, that a tadpole kept in the dark only increases in size, without however entering into the next higher grade of animal life, a frog. Thus we observe the same laws rule the vegetable and animal kingdoms as well as the human species, which I have in my work on "The Remedial Influence of oxygen and other gases in restoring nervous energy," more particularly pointed out. In fine we know that for want of due exposure to the air and light, arrest of development is permanently effected in man, in animals, and in plants, and all rendered weak and sick, or short lived, and incapable of continuing their species. In narrow streets, lanes, alleys, courts, and other dark ill-ventilated places and rooms, which our legislators remorselessly allow the people to live in, amply prove the truth of the observations: hence children of stunted growth, with bleared eyes, scrofulous, leucophlegmatic, pale, sickly, weak, watery frames, engendering diseases which will carry them and others off prematurely, by measles, scarletina, small-pox, &c. They are like hot-house plants; when exposed to the cold their vitality is too low to resist morbific agencies, and they perish; whereas those whose frames have been accustomed to strong light and pure air, resist and live. The arrest of human development is palpable in large towns; in France, the government has lowered the standard of height for the conscripts for Paris and large towns by two inches, in order to equalize the effect of the law of conscription upon the country and towns people.

The tendency of the window tax is to lessen the ingress of light and air, into our houses; a tax upon health, and paid by death. The influence of light quickens the operation of the air, *i.e.* the oxygen of it, in converting the noxious qualities of decaying organic matter into water, carbonic acid and azote, a process of destruction indica-

ting the necessity of wide streets. In our northern climate the sun should be courted at as many inlets as possible, and which may be rendered ornamental and warm for winter, by being doubly glazed. The want of good ventilation and light in our hospitals and other hygienic receptacles, was formerly very injurious to the inmates; and even now great improvements are wanted, for it has been proved that patients do much better on the ground and 1st. floor, than on the 2nd. and 3rd. because of the impure air ascending; also in the wards fronting the south and west, in strong light and warm rays of the sun, than in the darker and colder wards fronting the east and north. This is a principle of which every invalid should endeavour to avail himself. Doubtless the neglect of these and other hygienic principles, formerly caused the great prejudice that the poor evinced against going into hospitals; and many still have a horror of receiving that aid, which is provided there for them in a degree which even the rich can barely equally supply themselves. Now formerly hospitals were so ill-ventilated, that they proved a curse rather than a blessing, for no case of compound fracture ever recovered, few if any survived the amputation of a limb, and mortification followed nearly all wounds however trivial. So great was the prostration of the physical, and even of the moral powers arising from want of pure air.

By diminishing causes and disposition to fall into disease, we must necessarily reduce the number of daily victims of maladies, and raise the standard of public health, and at the same time advance the moral excellence of man, augment his mental capabilities, and increase the sphere of his usefulness, for it need not be stated, that without sound bodily health, the intellectual energies may languish and decay. Our subject therefore, is one which not only concerns personal feelings and social happiness, but involves the well-being of society at large, and the intellectual as well as the physical character of nations. We have said elsewhere* "no people will long hold a high rank among the nations of the earth, where delicacy of frame and constitution are associated extensively, as requisites to female beauty and interest."

Therefore, no higher object than that to which the present work is devoted can engage the attention of the nation, since its object is not only to prevent, but cure, the herditary tendency in future ages to scrofulous diseases and consumption, which are undoubtedly the most prevalent attendants upon unhealthy occupations and localities. It is well known that nervous diseases and affections of the mental faculties depend generally in the first instance upon functional derangements of certain organs, which finally become organically affected if not cured by removing the cause, often a local cause. Some people escape the above infliction of circumstances, but they often engender in their constitution a morbid material to be trans-

* Dr. Evans Riadore on "Irritation of the Spinal Nerves as the cause of Nervousness and disease of the Principal Organs of the body."—(Published by J. Churchill, Princes Street, Soho.)

mitted to their offspring to produce morbid action in them, or in a future generation. Thus eventually an atmospherical, or an unfavorable occupation of the people will eventually determine the varieties of diseases, and character of communities of men, and even of nations. Hereditary deviations in excess; such as nervousness, insanity, rheumatism, indigestion, affections of the lungs, glands, skin, &c., may, in the infancy of any community from the above, and in combination with other causes, become the basis of those more permanent traits which we designate and observe to be the character of a people perpetuated within human record. The decline of the Roman Empire is recorded to have been marked by the general predominance in the people of a nervous temperament, especially among the Roman women.

Hence, we can readily give our assent that moral and physical tendency to passive or active diseases are engendered in one generation, and continued in another, as certain as in some people the continuence of conformation of particular organs, abnormal and of external form and features; the latter is peculiarly marked in the Jews and in some European nations, nay, even in provinces. The characteristic signs of a tribe, (the Jews will serve to illustrate) for if we take for example those who have resided for generations in the north of Europe, and compare them with those of the east, who are generally remarkably diminutive and dark, indeed some are said to have become quite black, and ill-formed; we shall find the former to be a handsome, athletic, and fair people, yet all have a Jewish countenance. We see on every side, not families alone, but by intermixture of blood and descent, whole races of mankind become subject to deviations of internal structure, often too minute to be detected by the anatomist, or even comprehended by him, and only observed in the aggregate effect.

In the report for 1842 by Mr. Chadwick, he notices the deplorable condition of Dress-makers, and Journeymen Tailors; the latter work in confined air deteriorated by their breath, and the noxious effluvia from their persons, and the use of gas in the evening; the system is thus enervated, and rendered peculiarly susceptible of being morbidly affected towards the evening.

Mr. Chadwick writes in respect of tailors

"That besides the young men in great numbers, who leave town to return to their friends in their native place to die, or continue, with a ruined constitution a short and miserable life, that of 283 persons entered during the year 1839 in the E. and W. Unions of the metropolis, under the general head of Tailors, 123 died of disease of the respiratory organs, of whom 92 died of consumption, 10 of disease of the nervous system, (of whom 8 died of apoplexy), 16 of epidemic or contagious diseases, (of whom 11 died of typhus,) 27 are registered as having died of "uncertain seat," (of whom 13 fell victims of dropsy, 8 of the disease of the digestive organs, and 6 of diseased heart,) and of the whole 283 only 29 of old age, probably these were masters: it is also stated p 104, that 53 per cent of the men die of diseased respiratory organs, and only 38 per cent die of these diseases in the remote districts. Also it states that 25 in the hundred attain old age, in London only 12.

Out of 52 milliners and dress-makers who died during 1839 in the Unions of the metropolis, 41 of the deceased attained the age of 25! The average of the 33 of those that died of lung diseases was 28! It can scarcely be necessary to introduce any arguments or proof that ignorance and vice are ever coexistent, or that the cause of the loss of life, health, and money to the individual, and annoyance and loss to the employer, is to be traced to this source."

Undue or protracted mental or physical application, lessens the energy of the mind and body; thus the employer must lose no inconsiderable service and profit, whilst the mind of the assistant becomes morbidly vitiated, and may finally lead him to rob his employer to supply pecuniary means to gratify vitiated habits, and love of strong liquors, to counteract the morbid condition of his mind and body. When leisure for recreation is almost denied to young people, the little time they have is often consumed in the grossest manner, under the plea that they are forced to condense their pleasure voluptuously, to satiate voracity engendered by oppressive exclusion from rational recreation; thus compunction of conscience which generally follows immoral excesses, by degrees becomes a less troublesome monitor, until at last, the moral bulwark, probably never at any time strong, gives way, self respect is lost, and too often vice enters without any resistence, thence to rule absolute. Hence, confidence of the employer is shaken and finally lost, disgrace follows, they become a burden to the public, or fill an unregretted or untimely grave, after having laid the seeds of moral pollution amongst their former youthful associates; who continue vice, and favor development of disease, in those organs of their bodies most predisposed to such action, either from hereditary cause or adventitious weakness. We find that generally the most important organs, become under such circumstances first diseased, such as the lungs, heart, stomach, kidneys, and not unfrequently the brain, terminating fatally, or in a chronic form. Were the evils of vicious life to cease here, it would comparatively be well, but unfortunately the offspring of drunken and immoral parents are known to be too often prone to give way to the vice of intemperance and the usual host of attendant evils.

A child born of matured, healthy, moral parents, accustomed to good habits, is in a fair way of growing to manhood with every prospect of becoming a respectable member of society. Therefore it is of the utmost importance to have the children of the poor classes placed under the superintendence of national guardians, in a moral atmosphere. In fact, the vices of the poor (within certain limits) cannot justly be imputed to them, and it is mere cant to declaim against the poor for their different failings, as long as little or no efforts are made to alter the mode in which they are brought up, or to prevent them becoming dupes of sophistry either in religion or worldly matters. Since knowledge, industry, and probity are not qualifications naturally inherent in man as the animal passions are, consequently they must be acquired, and that can only be obtained by application and proper training, with appropriate time.

The mind of a child may be compared to a blank photogenic

paper absorbing imperceptibly the moral medium by which it is surrounded, and his body the bad or good effects of his physical condition, which during adolescence, acting, like rays of light upon photogenic paper, develops the primitive impressions to which it was exposed, and his habits in youth and manhood are either moral, manly, religious, or on the contrary diseased and vicious.

It has been observed that in infancy, the impulses are all of them irregular; a child is cruel, cunning, and false under the slightest temptation, but in time is taught, or learns to control these inclinations, and to be habitually humane, frank, and truthful. So is human society, in its earliest stages, sanguinary, aggressive, and deceitful, but in time become just, faithful, and benevolent. To such improvements there is a natural tendency which will operate in all fair circumstances; though it is not to be expected that irregular and undue impulses will ever be altogether banished from the system, nevertheless, it should be our united effort to reduce it to the least possible minimum. The strong should help the weak to the right way of life, and restrain vice.

Reason and observations alike confirm the necessity of the nation to educate the poor, and afterwards to guard them for a limited period from falling into vicious ways, and paying more attention to the means of preventing crime, than as hitherto, to the award of punishment, which is unchristian in principle, and injurious in practice. The corporeal punishment of criminals has signally failed to produce ulterior good effect in themselves, or deter others from committing crime, nay it has but too often engendered a morbid reaction of sullen determined purpose of revenge upon the public, with reckless indifference of what consequences may befall them.* In our opinion, criminals should be regarded as patients laboring under social disease, ignorance,† or functional derangement of the mental faculties, and treated accordingly as we shall presently point out. Formerly all violent cases of insanity were treated with severity, straight-jackets, with total neglect of benign and moral care, and with scarcely any degree of success; but now, most recent cases however violent, however desirous to destroy themselves or others, or to steal or otherwise injure their fellow-creatures, are generally cured in from three to twelve months, or at most in two or three years, by the present adopted system of benign, moral, and physi-

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* Two hundred and fifty years ago, Shakspere pointed out the fallacy of this system ever since continued:

Duke. In time the rod
Becomes more mock'd than fear'd: so our decrees,
Dead to infliction, to themselves are dead;
And liberty plucks justice by the nose;
The baby beats the nurse, and quite athwart
Goes all decorum!

† *Duke.* Take him to prison, officer;
Correction and instruction must both work,
Ere this rude beast will profit. MEASURE FOR MEASURE

cal treatment, which our immortal Shakspere also suggested in his tragedy of King Lear; a merciful principle that should be the basis of a national code of managing, and to recover criminals as well as the insane to the social circle, by means as regards criminals which we shall point out hereafter.

SECTION IV.

Modern nations have partly founded their laws upon the ancient Greek and Roman civil codes. The superiority of the laws of any country consists in their adaptation to the habits, wants, and happiness of the people. The improvement and perfection of the laws, their enforcement, inflexible, just and merciful administration, necessarily must grow with the advancement of the people in the scale of civilization, and their religious, moral, and social habits.

The law of our country, like other sciences, has been under the greatest obligations to literature: we owe to learning, in a great measure, our knowledge of the proper object of the laws, and the means of attaining their administration in the most effectual and economical manner.

The views in which law has been contemplated by great men, in civilized and polished nations, is interestingly conveyed to us by ancient writers. The prevention of crime, says Plato, (De Legibus) is the greatest object of the law: Cicero, says in his first and second books "De Legibus," and in his work "De Naturâ Decorum," that law is a rule of right reason, recommending what is right, and forbidding what is wrong; and Livy says, that law is deaf and inexorable; equally, at least, favoring the poor as the rich, and governing every person in the state, from the highest to the lowest. The end of all laws, Andronicus Rhodius observes, is to direct what is good, and to forbid what is bad.

There can be no doubt, that by general diffusion of learning, and acquaintance with the sciences, that the laws have, and do continue, to improve in humanity, in England, France, Germany, and Italy; which is amply demonstrated by writers of the present age: yet in this country the improvements in the laws have principally been directed to the means of detecting crime, and awarding the punishment, more certain, justly, and leniently, than in the means of their prevention.

An English lawyer has written, that the maxim of legislators should be to obtain such a condition of the law, that "no man ought to be prohibited by law from doing what he ought to desire to do, or to be compelled to do anything which he ought not to desire to do."

The means of attaining this important end of laws will be greatly facilitated by science and literature; and also the direct means of restraining in the people such propensities or tendencies as are most

important to prevent; and in directing the punishment to its proper objects, real criminals, and to them alone.

Some customs, the residue of barbarous times have, doubtless, greatly retarded legal, as well as other improvements, they have ever the greatest sway and tenacity in the least cultivated countries, and are less regarded in countries where the arts and sciences are most cultivated; hence, many of the old usages and customs of this country are destroyed, and are, in general, on the decline, as appears from the mutability which prevails among them, owing to the influence of polite literature. In an essay on crimes and punishments, by the Marquis Beccaria, the following observations are made:—"Would you prevent crimes, let liberty be attended with knowledge: as knowledge extends, the disadvantages that attend it diminish, and the advantages increase. Knowledge facilitates the comparison of objects, by shewing them in different points of view. When the clouds of ignorance are dispelled by the radiance of knowledge, authority trembles, but the force of the laws remains immovable. Men of enlightened understanding must necessarily approve those useful conventions which are the foundation of public safety; they compare, with the highest satisfaction, the inconsiderable portion of liberty of which they are deprived, with the sum total sacrificed by others for their security; observing that they have given up the pernicious liberty of injuring their fellow-creatures; they bless the throne, and the laws upon which it is established."

For the last hundred years, it must be admitted, in this country, a much greater attention and expenditure of money has been directed to the means of detecting and punishing offenders against the laws, than would have been required, had we made a more judicious effort to civilize the people, by more liberal expenditure of money paid for the education of the poor; the germ of the productive classes and wealth of nations. Every act of dishonesty amongst the productive classes should be no less regarded as a proof of defective principle of national government, as the individual deficiency of moral principle.

Whilst some boast of our laws as signal means of just administration amongst all classes, we nevertheless, practically have much greater cause to wonder at their extent, incongruity, injustice and severity upon the poor, who at our police offices, are daily thrown into prisons for weeks, with or without hard labor, for an offence for which the rich pay without the slightest inconvenience or mortification, three, five, or ten pounds, and return to their families, who probably never hear anything of the affair; whilst the poor man's family are greatly distressed—reduced to pawn their property —tax their friends—beg, steal—and lastly, become an inmate of a prison or an union: thus, once degraded, the whole family too often become reckless, and initiated into bad habits, from the effect of the law upon an erring parent, perhaps the first offence of a father, whose earnings may be the sole dependence of a large family. We think that if a fine is awarded for misdemeanour upon the educated and

rich people, it should be at least as severely felt by them, as the ignorant poor feel their imprisonment.

The law takes no active care for the physical and moral condition of the prisoner's family, consequently they are forced by unfortunate circumstances and neglect, to tax their more fortunate neighbours, either by borrowing, begging, or stealing, rather than apply for relief to the parish, generally their last resource. Thus eventually they become a further charge to burden the frugal, the industrious, and the active, in amount much greater than would have been required to save all from the disastrous error of one.

Unfortunately, facts like the above may be adduced, for all in the main agree, as in the language of Douglas Jerrold, that "the poor must be helped, the erring educated, the privileges of every class rated as consisting in the power of mutually supporting each other." Wilderspin, on early discipline, has thus pointed out the advantages of general education.

"A strange idea is entertained by many, that education unfits persons for labor, and renders them dissatisfied with their condition in life. But what would be said were any of the powers of the body to be in a certain case disused? Suppose a man were to place a bandage over his right eye—to tie up one of his hands —or to attach a ponderous weight to his legs—and when asked the cause, were to reply, that the glance of that eye might make him covetous, that his hand might pick his neighbour's pocket, or that his feet might carry him into evil company: might it not be fairly replied, that his members were given to use and not abuse, that their abuse is no argument against their use, and that this suspension of their action was just as contrary to the wise and benevolent purpose of the Creator, as their wrong and guilty application? And does the reason fail when applied to the mind? Is not the unemployed mental faculty, as opposed to power? Can the difference between mind and matter overthrow the ordinary principles of reasoning and of morals? Besides, how is he to be prepared for the duties he has to discharge?—By mere attention to his body? Impossible. The mind must be enlightened and disciplined; and if this be neglected, the man rises but little in character above the beasts that perish, and is wholly unprepared for that state to which he ought to have aspired."

"Desire of knowledge is the natural feeling of mankind, and some nations have judiciously availed themselves of the principle; and in a Grand Duchy in Germany, by a statute, every head of a family is compelled to send his children to school, or prove that they receive adequate instructions under his own roof. Heavy penalties are attached to the breach of this ancient statute. Designed in fact as one of the safeguards of Protestantism, it may even in the present day be regarded on the score of sound policy; for what means can be pointed out which can more promote social happiness, than universal education, in harmony with christianity. The immediate effect of the statute is to establish schoolmasters in every hamlet throughout the country.

"In Prussia the educational system is by law established, all children under 14 years must attend the schools, and out of 2,043,030 eligible children, 2,021,421 did actually attend, the rest being ill, cripples, idiots, and otherwise incapacitated. In Austria a few years since, there was a school for every 275 families." In the States of America the praise-worthy custom of educating the people is very efficient according to Mr. Lyell, who writes in his work on the manners and conditions of the Americans: "in no respect perhaps do the two nations of the United States and Great Britain differ more essentially, than in the system of education pursued by each. In New England there is oral instruction in the shape of lectures on almost all scientific and literary subjects, delivered by men of high reputation for learning and ability. The Bostonians pay annually for public instruction in their city alone, the sum of £30,000 sterling, which is about equal to our Parliamentary grant of the year 1841 for the whole of England; while the sum raised for free schools in the state by taxes, for wages of teachers, and their board exclusively, is liberally and cheerfully paid."

There is not so much as a secluded corner with a dozen houses in it without its schoolmaster. Such a system must necessarily insure a much higher moral and social tone of the people than can exist among people neglected by their government. By tuition and example in a well-conducted school, unfortunate temperaments and dispositions may be modelled into habits of usefulness at an early age, rather than left to the guidance of their temperaments or natural consequences of their neglected condition, to draw others into the vortex of their iniquities, to be an infinitely greater expense to the nation, in supporting and punishing them sooner or later, than would have been required in the pliable age of youth to stimulate their energies, guide them morally and physically to useful purposes, or at least to be passive, doing no harm to the community.

Locke has written—"To make a man virtuous, three things are necessary: 1st. natural parts and disposition; 2nd. precepts and instruction; 3rd. use and practice, which is able better to correct the first and improve the latter." Natural parts and disposition are generally inherent in a degree more or less, amongst civilized people, or at any rate they are the product of civilization, since barbarism is the end of the history of every state. Indeed, human beings seem naturally to return into barbarism when the influence of civilization is withdrawn from them. This fact of degradation has too often been exemplified in members of the most polished nations of the world, France and England. In North America where the fur trade is carried on by hunters and trappers who live in contact with the savages in the service of the French, Canadians, and English, North and West and other fur companies, become ferocious as the savages. The experience of a century has shown that the indiscriminate admission of civilized men as traders into the territory of the Indians, is destructive to the morals of the former, and not only to

the morals but the existence of the latter. The history of the French, English and Americans who have allowed their people to trade with the Indians shews, that the natives in every case have been swept away by war, disease, and famine, and the whites have exhibited a frightful mixture of all the vices of civilized and savage life. In the memoirs of an American we have observed the following:

"I have heard it related among white American trappers as a good joke, that a trapper who had said that he would shoot any Indian whom he could catch stealing his traps, was seen one morning to kill one; and on being asked if the Indian had stolen his traps, he answered—"*No, but he looked as if he was going to.*" An Indian was thus wantonly murdered, and white men laughed at it as at a joke."

Too numerously may well authenticated, debasing, and powerful facts be adduced; well indeed may powerful nations and wealthy individuals be reminded, that a high and imposing trust appertains to power and affluence, to secure by every enlightened means, popular happiness and morality, not only for the present, but the future generations. Moral culture may have a better effect upon children and their future progeny than on the parents; little can be done with the old ones, but their young may be taught, and doubtless more readily in every successive generation. The variegated holly is the effect of special culture, certainly a great physical change from its plain original stock, yet a greater moral and social change can be produced in man by example and mental culture, notwithstanding his tendency to return like the variegated holly to the original condition of nature. The history of mankind proves the necessity of continued exercise of mental culture: Dr. Samuel Johnson says "that negligence and irregularity long continued will make knowledge useless, wit ridiculous, and genius contemptible."

The exercise of honesty, prudence and industry, are within the power of every man, and as sure to protect him from harm as to place him in honor; Burke writes that "it is evidently ordained that the greatest things and the most praiseworthy that can be done for the public good, are not what require great parts, but great honesty of purpose, with activity and prudence; that after very active, varied, and extensive opportunities and experience of judging of men and manners, he never knew a man that was *bad*, fit for any service that was *good*: there were always some disqualifying ingredients mixing in the compound and spoiling it." Hence the important duty of every man to examine and guard his principles by observing the golden rules of Gresly.

"Reject the society of the vicious; shun the agreeable infidel and the accomplished profligate. Lay it down as a fixed rule, that no brilliancy of connexion, no allurement of rank or fashion, no agreeableness, no wit or flattery, shall tempt you to associate with profligate or openly irreligious men. It is impossible not to suffer by neglect: if you do not fall into their vices, still your heart will be estranged from the will of God."

Moral degradation is not only favored, engendered, and conti

nued by evil examples, but by physical causes, and it is now statistically proved, that with our increase of civilization, the sanatory condition of states and smaller communities having undergone upon the whole an actual improvement, that diseases have rather been falling off in number and decreasing in intensity; every onward step in the path of knowledge and true refinement has had a beneficial influence on the entire corporeal being of mankind. It cannot be denied that with the progress of civilization, not only does population in general increase, but that the length of individual life is augmented, whilst the liability to sickness, and to the sufferings to which every individual is obnoxious is lessened. Epidemical diseases formerly were regarded as necessary evils, and inseparable from humanity, or proceeding by divine ordinance; they are now known in civilized nations only by name or history. In virtue of the support derived from cultivated intellect, man becomes capable of giving successful battle to all the external influences that tend to its detriment. The enlarged views engendered under the influence of civilization and social co-operation, will in due time overcome those peculiar evils that confessedly have arisen with the rapid increase of our commercial and manufacturing transactions; these have somewhat changed our character in body and mind ere the counteracting means were suggested or at any rate practised. Hence we live in a state of unnatural excessive excitement, thus in one case our muscles waste for want of action, in another our nervous system is worn out by excess of action. Vital energy is drawn from the operations for which nature designed it, and devoted to operations for which it is incompatible harmlessly to be expended.

Continued and laborious occupation in crowded rooms is unfavorable to health; tending to vicious habits, dissipation, uncleanliness, and disinclination to take exercise or amusement in the open air, or to pursue the means of moral culture of truth; advantages which render men most reasonable, and the most reasonable feel more deeply than others, the real interest and motives they have to be virtuous. Without the study of nature, man can never know the duty he owes to himself and others, consequently, it is observed that the most enlightened are the most interested in being the best men, whilst those who are deprived of knowledge are over-bearing, selfish, without principle or true happiness, equally insensible to the offices of benevolence, the approbation and kindness of his associates, or to the inestimable blessing of society. To produce then these desirable traits in the people, early tuition and moral examples should be rigorously aided by the nation: I would suggest that children in all free schools should be taught to comprehend as far as possible, by illustration, the meaning of technical terms in the sciences, since in this great commercial and manufacturing country, every art connected with the sciences is extensively and practically carried on. Their knowledge of technical terms in the sciences may either enable the children to perform more efficiently their future calling, or to pursue for their recreation, for instance Chemistry, Botany, or Architecture.

Of the national policy of the latter science, one of England's greatest architects, Sir Christopher Wren, has thus spoken :—

"Architecture has its political use, public buildings being the ornament of a country; it establishes a nation, draws people and commerce, and makes the people love their native country, which passion is the origin of all great actions in a commonwealth. It aims at eternity, and therefore is the only thing incapable of modes and fashions in its principles (the orders) which are founded upon the experience of all ages, promoted by the vast treasure of all the great monarchs, and skill of the greatest artists and geometricians, every one emulating each other; and experiments of this kind being greatly expensive, and errors incorrigible, is the reason that the principles of architecture are now rather the study of antiquity than fancy."

Architecture, the finest of all the fine arts, one which includes within its extensive domain, the sciences of mechanics and the resources of much of the sound philosophy of the day; as also a host of minor arts and trades, which are subsiding to the one great object of erecting a structure, which will not only endure for ages, but command the respect and admiration of man by its noble appearance, its fair proportions, the excellence of the materials employed, the workmanship bestowed upon its detail and its internal arrangements, in every respect adapted to the purposes for which the building was designed; all these objects it is the business of Architecture to fulfil, and these objects call for the display of the highest genius and talents on the part of an architect.

Specimens of beautiful building we have in abundance, yet with all our boasted advance in civilization, the poor man was not until within six or seven years ago, admitted even to the British Museum; and now he is excluded, without presenting a fee, from entering Westminster abbey, St. Paul's, the Tower, &c. It is gratifying to know that now the British Museum is freely opened, thousands flock there and even to the Tower since the charge was reduced, (instead as it ought to have been, removed); the receivers of the fee have been greatly enriched by the increase of visitors.

Hence the former disinterested and pious receivers at Westminster Abbey lowered their charge, doubtless, for the *pure gratification of allowing the people* to view, admire, and study the masterly degree of skill with which its various parts are combined to produce its grand and effective whole.

The government will now be forced by the general voice of the people, to educate all the rising indigent generations, by rigorously insisting upon every parent sending his child to his neighbouring free-school, where, by fully suppressing every evil example, and by cultivating moral example, the contents of our museums may be then not only studied, but understood, and the economy of our arts appreciated and improved, our science enlarged, our physical frames more vigorous, and our nervous system less sensitive.

The technical terms in sciences can best be understood where they may be demonstrated, which ought to be permitted and en-

encouraged by a paid officer, at every public building, as an inducement to study sciences, since the great advantages of technical terms at all times, is to convey concisely and emphatically to the mind, certain meanings or definitions which have been conventionally decided upon, and which, if attempted to be conveyed in what is called 'popular language,' would not only involve a description, in much circumlocution, but would embarrass the careful reader, rather than assist him.

We therefore recommend the people, particularly the tradesmen and artizans, to bestow attention to the elements of chemistry, geology, botany, architecture, or to such sciences as may be practically studied immediately about them, being well assured that if they understood the means employed in the arrangement of the hills, and rocks, their geological character, and chemical qualities, forming the basis of the soil or earths in the valleys, the character of the indiginous vegetation, the principles of its agricultural and chemical management, the nature, the mode of obtaining and preparing the minerals in their respective vicinity, their use and mode in the development of architecture; they will find an additional lively interest imparted to their holyday rambles, by being able to appreciate the beauties of the natural production and scientific constructions, and pronounce, with some degreeof confi dence, upon the good or bad taste of management of the natural productions and buildings in their vicinity.

"Science is a lock, and enquiry is the key," is an Arabic proverb; and since the key is found by reading and reflecting, no amusement can be cheaper or more lasting. A devoted attachment to the works of nature is an evidence of delicacy and refinement, thus elegantly described by a writer:—

"The study of nature is not less salutary in its influence, than unchanging and inexhaustable in the veneration which it affords. It purifies the mind from the dross of sensuality, and raises it above the degradation of low and selfish pleasures. It calls forth a spirit of observation, and exercises a discipline, which may become powerful instruments in facilitating the acquisitions of future years. It gives zest to the enjoyments of prosperity and the meridian of life, and solace and ornament to the season of adversity or decay: and more than all, will, when profoundly contemplated, inspire far deeper convictions of the Omnipotence of the Deity, and the wonders of the glorious creation, than ever resulted from efforts of human eloquence the most fervid or sublime. And the mind, having attained its full maturity of development and power, will seize with equal energy and success all the various branches of literature and science, which may be requisite to satiate the intellectual voracity, or essential to a vigorous prosecution of the destined path in future life."

To acquire even this exalted condition of the mind, there is nothing inconsistent with a strict regard to all the duties of life; on the contrary, it is the part of duty to draw happiness from these sources, which, in all the changes and misfortunes of life, will never cease to flow. The poet Gray, one of the most intellectual and fastidious of

men, says, "happy they who can create a rose-tree, or erect a honeysuckle; who can watch the brood of a hen, or a fleet of their own ducklings as they sail upon the water." An elegant writer, says, "the words are pure as inspiration, and we recommend them to our readers, of whom a due proportion no doubt are miserable. They will learn from them, what is of great importance to know under such circumstances; that their unhappiness is owing, not to the want of pleasure, but to their not understanding how to select and enjoy those which they possess, since they are given freely and impartially to all, so that no avarice can monopolize them, and no oppression take them away. This being the case, those who point out to us the extent and variety of such resources, and show it by their own example, ought to be recorded amongst the benefactors of mankind. No greater treasure can be offered to human desire than enjoyments like these, which at once exercise the mind, and improve the heart, repel the influence of sordid passions, and encourage the suggestions of humanity, virtue, and religion."

Our ideas of the Deity can only be worthy of Him in the ratio in which we advance in the knowledge of his works: in the language of George Combe:—

"True philosophy is a revelation of the Divine Will, manifested in creation; it harmonizes with all truth, and cannot with impunity be neglected."

The acquisition of knowledge is consequently an available means of our reverence for the Creator, and "To keep our will within the Will Divine," by ever seeking after and being guarded by truth. Truth is the great man's glory, and the poor man's ornament, his stock, his livelihood, his recommendation, his letter of credit.

Let a man cease to respect himself, and he will at once commence to retrograde in moral, physical, and intellectual character, or at least, not embrace every opportunity of improving. The habits of a self-respected man, eschew those enjoyments which neither elevate the soul, enlighten the intellect, or invigorate the body. Such men strictly observe the physical and moral rules to preserve health, which every man may acquire for himself, and every poor man ought to be taught at the expense of the nation, which, I believe, is the intention of government eventually to do, but ere it resolves upon any definite course, years may elapse; and, after all, workmen and others who have received merely an elementary education of reading, writing, and arithmetic, will find that, as far as they are concerned, self-culture must be their sole resource: not listlessly looking on in expectation of government working wonders on their condition; such individuals no efforts of a government will awaken or arouse from the state of moral and mental torpidity into which they have sunk. Employers and employed should remember that they have been called to the discharge of higher duties than to "work, work, work;" that is, by every legitimate means in their power, to improve their moral, physical, and intellectual condition and character. Southey says—

"A character for probity and industry, serves a man in every station

more than that for intellectual attainments and habits, because they are no security for good conduct, unless they are supported by religious principles: without religion, the highest endowments of intellect can only render the possessor more dangerous if he be ill-disposed, if well-disposed, only more happy."

In cities young people are thrown together in large numbers, temptations are consequently forcible, and often fatally successful The practised and hardened crew who have abandoned themselves to the indulgence of their immoral passions, besiege the respectable portion with reputable character and correct moral principles. The former class, lost to morality and decency themselves, watch for opportunities to reduce the latter to the same degraded level. They endeavour not only to copy the manners, but to ape the vices of older profligates; and the rapidity with which they wreck health, character, and conscience, is a most melancholy proof of the force of temptation, and the prevalence of youthful depravity; destructive to the dear hopes of parents, relatives, and friends, eventually perhaps, consigning them to ignominy in the prison of despair.

Gambling, and public houses, are the resources of persons whose leisure is unduly condensed into the minimum, hence the fondness of excitement. Again, the respectability of theatrical amusements, is too often made an excuse, to abuse the time spent there, and plausibly urged as an innocent pastime, which, undoubtedly in the abstract it is, but further excitements are required and indulged in, and by degrees some houses of pollution in the neighbourhood are visited, and finally made their general resort. Having lost all soul, all sympathy for their fellow beings, all hope in this world, left to unceasing remorse, and nothing in reserve but irretrievable misery. In the theatrical advertisements, the unwary youths are not informed how many appendages of ruin are hung around the vestibule of the abused, and not the used temple; nor how easy is the transition from the court of Thespis to the revels of Bacchus and the haunts of his dissolute train.

> " Soon as the potion works, their human countenances,
> The express resemblance of the gods, is changed
> Into some brutish form of wolf or bear,
> Or ounce or tiger, hog, or bearded goat,
> All other parts remaining as they were;
> And they, so perfect is their misery,
> Not once perceive their foul disfigurement,
> But boast themselves more comely than before."

Thousands of the young of both sexes, attribute to the abuse of theatrical amusement, the commencement of a course of life that led them to bid adieu for ever to hope, reputation, happiness, and sympathy for their fellow creatures.

Here we need observe the following advice of Dr. Johnson :—

"Let every one that is struck with horror at the mention of a man void of pity, that feels resentment at the name of oppression, and melts with sorrow at the voice of misery, remember that those who have now lost all these sentiments were originally formed with passions, and instincts, and reason, like his own: let him reflect that he who now stands most firmly, may fall by negligence, and that negligence arises from security. Let him, therefore, observe by what gradations men sink into perdition, by what insensible deviations they wander from the ways of virtue till they are at length scarce able to return."

The habit of mental cultivation in studying the liberal arts and sciences, will invariably have a benign influence upon the impetuous tempers of men, which too generally attends vacant and idle minds; interesting and engaging them, as it were abstracting them from their usual habits, and thereby rendering the mind more manageable, and the baser passions more subdued.

"Mycenas didicisse fideliter artes
Emollit mores nec sinit esse feros."

"The liberal arts when faithfully pursued,
Our morals chasten, nor suffer to be rude."

OVID.

Ignorant minds, or persons only acquainted with their callings as means of earning a livelihood, are generally insufferably fawning and servile to customers or employers, and equally rude, coarse and domineering to those subservient to their position. Such men can only be regarded as mere machines, totally unfit for general or rational society, whatever wealth they may possess: they ever speak only of themselves, impatient of interruption, rude to those who do not agree with them, or cannot have patience to listen to their coarse remarks, and self-laudation, as, "I paid so much for this," "I will give so much for that," "I can do this, and that, why does he or they do not as I did, I would, I could, or I should do?" "he was a fool, for I have done so, I would have done so," and so in short, I—I—I—is brayed forth eternally, until he is left alone like a hyena, unfit for society, to continue in the world and praise his own sagacity.

A man should endeavour to possess a certain amount of liberal and scientific information, to which he should be always adding, in order that he may improve and advance in the respect of his fellowmen. The formation of such desirable habits is not the result of occasional attempt, but of a continued effort to rise in the social scale, or in wealth, fame, or exalted virtue. What enabled Franklin to attain the highest honors of philosophic fame, to stand as he expresses it "before kings" and live dear in the memory of his countrymen, was the early formation of good habits and rules, which every body should know, by perusing his autobiography; they enabled him always to act consistent with the general tenor of his moral and useful life, a condition of self-control and order seldom attained, for it has been observed that the wisest man will

occasionally do a weak thing; the most honest man a wrong thing; the proudest man a mean thing; and the worst of men will sometimes do a good thing.

Whilst there are many men of well-principled, contemplative minds, who ever regard, in the language of Hanway, that "those days are lost in which we do no good; those worse than lost in which we do evil:" well assured as Dr. Johnson has written in the *Rambler* "that the end of society is mutual beneficence: a good man is always uneasy when he finds himself acting in opposition to the purpose of life; because though his conscience may easily acquit him of malice prepense, of settled hatred, or contrivances of mischief, yet he seldom can be certain that he has failed by negligence or indolence, that he has not been hindered from consulting the common interest by too much regard to his own ease, or too much indifference to the happiness of others." Thus it must be confessed that there are thousands of employers, particularly of the employed class, who never have time to contemplate their moral and physical duties, relative even to themselves; who are driven most unnaturally, like machines, continually in their respective callings. Surely. at least one half of our time should be expended in sleeping, eating, and amusements; being equally requisite for a healthy physical and moral tone. Therefore, to be obliged to occupy ourselves, about three-fourths of our time in maintaining a mere existence, is most unnatural self-murder, or as Seneca calls it, "a breathing death, and burying a man alive." If a man would live in a manly and becoming manner, let him exert those rational faculties which are the dignity of his nature, and which put him above the level of the beasts that perish.

It is incumbent upon the nation to make a law to ensure time for every hireling to improve himself intellectually, alike serviceable to himself and fellow-creatures, with the economy thus pointed out by Dr. Johnson:—

"As he that lives longest lives but a little while, every man may be certain that he has no time to waste, that duties of life are commensurate to its duration, and every day brings its task, which if neglected, is doubled on the morrow. But he that has already trifled away those months and years in which he should have laboured, must remember that he has now a part of that of which the whole is a little, and that since the few moments remaining are to be considered as the last trust of heaven, not one is to be lost."

All employers and employed should have by law, time for recreation and mental culture, by reading, attending lectures, and demonstrations of the arts and sciences in public buildings, or in the national schools, which ought to be built in every hamlet.

It is gratifying that of late a spontaneous movement has taken place among the people for acquiring knowledge and intellectual recreation, witnessed in the mechanics institutions, subscription libraries, and other places, although attended confessedly only by a ew in the relative aggregate of the people. Yet we know that the

British Museum is visited by thousands of persons in a day with impunity to the property; and so also are the hothouses and greenhouses at the Royal Botanic Gardens at Kew, together with some other Royal grounds, Palaces, and some public buildings of late at mitigated fees, which doubtless, must shortly cease to be demanded, It is impossible that so many persons of all classes should visit places where good taste prevails and sciences are displayed or cultivated, without having their minds enlarged and enlightened. Thus a gradual improvement must ensue in the habits and morals of the people. Hence the importance of gaining time for the people, for mental culture; above all, to train the rising generations by a national system of education, embracing largely natural philosophy, because as Newton said "every true step made in philosophy brings us nearer to the First Cause, and is on that account highly to be valued;" —and that "the business of natural philosophy is to deduce causes from effects, till we come to the First Cause, which certainly is not mechanical." All great physiologists, &c. assert that all organs in the vegetable and animal kingdoms give evidence of a purpose, and Cuvier says that "this conviction of a purpose can alone enable us to understand every living thing," and again Newton has written "this beautiful system could have its origin no other way than by the purpose and command of an intelligent and powerful Being who governs all things, not as the soul of the world, but as the Lord of the Universe; who is not only God, but Lord and Governor." and again expressed in the language of Whewell in his Indications of the Creator.

"We can plainly discern that we have ideas elevated above the region of mechanical causation, of animal existence, even of mere choice and will, which still have a clear and definite significance, a permanent and indestructible validity. We perceive as a fact, that we have a conscience judging of Rright and Wrong; that we have ideas of Moral Good and Evil; that we are compelled to conceive the origination of the moral world, as well as of the vital frame, to be directed to an end, and governed by a purpose. And since the Supreme Cause is the cause of these facts, the origin of these ideas, we cannot refuse to recognise Him as not only the Maker, but the Governor of the World; as not only a Creative, but a Providential Power; as not only an Universal Father, but Ultimate Judge."

SECTION V.

To make the people moral and intellectual, the essential means must be a good sound education, nationally provided and enforced upon all indigent children, and not left as hitherto to the voluntary system, and tardy dole of the rich, or caprice of the clergy of all denominations and their congregations, which has only served to demonstrate the folly of depending upon such resources or such instrumentality for the education of a nation, since it is an indisputable fact

that one half of the adult population of England and Wales are unable to write their names, according to the returns of the Register General.

Mr. Porter states in that report, that during the years 1839, 1840, and 1841, out of 735,788 persons married, 303,836 affixed their *mark* to the marriage register by way of signature. In Mr. Tremenhere's report to the committee of council on Education, he observes, that in Monmouthshire and Wales, 48 males in 100, and 69 females in 100, were unable to write their names: while in Cheshire and Lancashire 40 per cent. of males, and 65 per cent. of females, were similarly disqualified. In his enquiries into the state of crime in the northern divisions of Lancashire, the Rev. Mr. Clay, referring to the prisoners admitted into the House of Correction at Preston, during the year 1844, ascertained that on 1022 persons committed, 49 per cent. were unable to name the months of the year; 39 per cent. were ignorant of the name of the reigning sovereign; 42 per cent. knew not the import of the words "virtue," "vice," "righteousness," &c; while 13 per cent. were unable to count one hundred. Incredible as it may appear among the opinions as to her Majesty's name, seventeen were in favor of 'Prince Albert,' while thirteen supposed it to be 'Elizabeth.' Their religious ignorance was still more deplorable, for 39 per cent. had never heard of the name of the Saviour: the reports adduce other instances too abundant, and distressing proofs of ignorance, and of the necessity of some general plan to educate the people *at home*, before we subscribe money to educate our fellow-creatures *abroad*. Good-natured people are induced by either interested or misguided persons to throw their money away upon foreign savages, and forget the good old adage that charity begins at home. Our boasted claim of being at the head of civilized Europe, is an unworthy distinction whilst the returns of the Register General supply facts of mental destitution as above; and our material wealth will only be regarded as the exponent of an ingenious system of industrial slavery.

On this subject I would humbly suggest that all children ere leaving school should undergo a strict examination by an appointed public officer, and be certificated of having acquired the elementary education according to the national standard, before he or she, can leave school to earn their livelihood and receive the rights of citizens. First, because we are commanded to address our Creator with understanding, in the language of Macculloch:—

"God is known by his power; that power is known by his works; and how shall we approach to estimate Him, unless we examine those works? It is not by assenting carelessly to the term All-powerful, that we shall learn to feel what that power is; it is not by barely admitting Him to be the cause of all things, that we shall acquire a knowledge of him; that all knowledge which he has permitted us to acquire in our present condition.'

The interest of this life as well as of that to come, equally obliges us to educate the rising generations, in order that they may in life improve their social condition, or at least retain their position and take an interest in attending their respective places of public worship,

and comprehend the religious teaching of their ministers. Every inducement and facility should be given to the people to attend public places of worship. In our excellent national church I fear that thousands of the humble classes refrain from attending, because they are made to feel their humiliated condition in distinct places, apart from their superiors.

Formerly it was the custom to have benches in the body of the church, instead as we now have, hired pews, a modern innovation, and illegal it is generally believed. Certain it is, that so marked a distinction is obnoxious to the poor, especially to those who are lax in their religious duties, or altogether strangers to the blessings of the opportunity. Whilst pews are continued to be rented, we think a distinct service should be performed, on a sunday at least, when all the pews should be thrown open for all comers without distinction of classes and places, at some early hour when the people may attend in their ordinary or better clothes as it may be most convenient to themselves, in order that they may not feel the degradation of contrast with a better dressed congregation.

We think that the cause of religion would thus be served, by suppressing envy on one hand and pride on the other, and favor a more congenial spirit to join in the glorious prerogative of performing our service with understanding and clear reason.

Since the mass of the people have not received the necessary preliminary education in their youth, time and means are now required to be set apart for their advantage; to cultivate general intelligence and laws of order, to frustrate combinations to effect public injustice, to cultivate the intellects, and to understand the Creator's physical laws are requisite for rational enjoyments, possible preliminary to a moral and religious life. At any rate it would in these comparatively enlightened days, be more befitting us, as a French writer has observed, not to continue imitating the Grecians and the Romans in building monuments of brass and stone, to commemorate public exploits, or deeds of public virtue, or of 'high emprise'; for these countries may be regarded, in the acme of their refinement, as the veriest barbarians, since no hospitals were erected for their wounded or diseased soldiers, or places for the reception of the destitute of any kind. What are columns &c. principally erected for, but to beautify the city, or if they really are monuments of gratitude from a nation, might not Hospitals &c. be built, equally ornamental to the city, and honorable to those in whose name they may be erected. It therefore behoves us to mark our age by constituting works of public utility, such as laws that conduce to the common happiness, health, and longevity, of the people," more particularly of the working classes, religiously, morally, physically, improving their condition, and rendering it imperative on the working or destitute people to have their children systematically taught, at the expense of the public, their relative duty to God, to man, and themselves.

A certain standard of educational acquirements should be fixed by the nation for boys, embracing not only reading, writing, and arith-

metic, but the elements of chemistry, particularly those branches connected with our manufacturing, agricultural and mineralogical pursuits.

To obtain efficient masters to teach the sciences, some difficulty may be found, since it is a subject deeply to be deplored, that the science of Chemistry, and indeed the sciences generally, receive so little encouragement in this country at the hands of the state. It surely would be both wisdom and economy in a great nation like this, which has taken to itself the high task of subduing every power, and appropriating every product of the earth to man's use, to set aside and endow a great body of eminent men for enquiry into nature. A vast step will be gained in civilization when our legislators shall come to see in all the clearness in which this truth must ultimately appear, that in this direction lies all future extension of our power. It is surprising that such a truth should still be but vaguely and obscurely apprehended, when the ultimate connexion between the most abstract discoveries in science and the greatness of nations, is daily set before us in such a striking point of view as in the connection of astronomy with navigation. National astronomical observatories are kept up, because without them, commerce must cease, and the ocean become what it once was—a useless waste. But because arts and agriculture still go on, and even advance on their present purblind methods, and by the help which science already gives them, would it answer the less to institute, if we may use the term, great chemical observatories also. The works of the laboratory of Giessen are a sufficient answer; already, on the faith of discoveries made there, a fleet of British merchantmen are loaded with guano for our shores, a freight which before another year is over will bring its return in corn and oxen, although it might be found at home in our sewers and chimneys now allowed to pass into our rivers and to the air, a waste that Professor Liebig says, tends gradually to the defertilization of the soil of England. His views and argument are of great importance, and may be thus briefly stated:—The tissue of all animals is, it is well known, ultimately derived from plants. Plants must therefore contain, as essential constituents, the inorganic elements as they are called, which are necessary to animal bodies. These elements are again derived from the soil; but analysis has shown, that here their supply is limited. To maintain the fertility of the soil, and restore the balance, need must be, that the animal returns to the earth the whole amount of these elements which the plant has taken from it. The elements thus limited in their supply are, it is scarcely necessary to remark, the *phosphates*.

Now, Professor Liebig argues, and the fact cannot be gainsaid, that with regard to their domestic arrangements, the English annually waste a vast amount of these phosphates. In this he foresees, unless a remedy be applied, the gradual defertilization of our land, already to be discerned, he says, in the barrenness of numerous large tracts, that were once known to reward the toil of the husbandman with an abundant harvest. Of course, these remarks do not apply

to the great extent of waste land which has never yet been brought into sufficient cultivation to yield food for cattle. In these he admits we still have a larger source in reserve, which I have proposed to be cultivated by criminals.

Doubtless our government will eventually open schools to teach efficiently, the different sciences, in order that masters for the national schools may be selected to teach the rising generations, all over the country, practical knowledge of the sciences, particularly chemistry and the laws of physics, the art of drawing, and the science of music, &c. Many of the pupils of the national schools, taught by such masters would necessarily become great men, and amply reward their country by the usefulness of their discoveries; with this view, masters should be directed particularly to select pupils peculiarly apt to comprehend certain sciences, in order that they may receive particular aid to favor superior proficiency; and affording always as far as possible, practical illustrations in the pursuits carried on in the neighbourhood of the schools.

England is so redundantly rich in all natural productions, the essential basis of her greatness as a manufacturing and commercial country, that her abundance of minerals, acids, and alkalines, in various combinations, have engendered a careless wastefulness in our manufactories, and very frequently a most unnecessary expenditure of capital and time, in consequence of very defective and erroneous notions of the first rudiments of chemistry. Whatever brilliant and useful inventions have originated with us, economically working them must be the offspring of an intimate union of a rational theory and enlightened and intelligent practice: hence the universal importance to mankind of establishing as part of a national course of education, the teaching of the elements of science. The science of chemistry develops nature to the observant eye of the student, and manifests her truths to his reflecting mind. Manufacturers need now, and for their future progress, every student in natural science that may be picked up in the national schools, peculiarly apt to have his eye and mind fitted to explore the economy of the laws of nature, as regards matter wherein nothing is wasted or useless; added to or detracted from, whilst all is ready to enter into new combinations.

In the present age, the science of chemistry has suggested numerous combinations of matters that were formerly either thrown away or expensively used. The practical metallurgists and artizans of former times were chemists and naturalists in their way, but their knowledge as practical manufacturers in the present day, would soon end in their ruin; now, a manufacturer must not only be well acquainted with chemistry appertaining to his branch, but with the continued advancement made in the science; otherwise he must fail to cope with his better informed neighbours in economy and expedition: another advantage of the daily improvements in chemistry is, the removal or modifying the obnoxious effects of trades upon the health and lives of the workmen. The science of chemistry most assuredly has been and will continue a source of occupation, profit, and

of health to the workman. The influence which this science exercises upon various branches of industry, may be demonstrated both negatively and positively—negatively, by referring to the innumerable mistakes and failures springing from a want of such knowledge, and positively, by a reference to the brilliant discoveries and inventions which have lately emanated from chemistry. These particular studies are, however, never to supersede in any way, the time necessary to acquire sound elementary tuition. Girls should also receive a sound moral educational course of general information, the duties of a wife and a mother in preparing and cooking food well and economically, washing and getting up linen, cutting out, making and mending clothes, and the duties of nursing, particularly sick adults and children. For want of knowledge of nursing, the wonder is, not that so many children die, but that so many survive their early mismanagement, since mothers and nurses are so ignorant of the animal economy, and of the means to ensure healthy children. Since all girls are naturally intended for wives and mothers, all should receive practical education, fitting them for that honorable distinction, in order that they may receive the applause of their husbands and family, thereby making their husbands' hearth the centre of his happiness. It is but too painfully known that the want of this has been the wreck of many respectable, industrious, well-disposed men, together with their hapless offspring. Boys and girls should be taught by well-paid and competent teachers in their respective classes, and be tested by a strict examination quarterly or half yearly, and more particularly at the final examination, when each pupil is to receive their certificate ere they can, under any circumstance, command the right of a citizen. The examiners should be appointed and paid by Government, for nothing is well done gratuitously: The Germans have a proverb "that place without pay makes thieves."

It may be objected that the cost of national education presents a formidable obstacle to its universal adoption, and we have contended for its universality: we admit the magnitude of the expenditure that would be required, but we must look at the advantages that would accrue. It is the purchase money that must be paid for civilization, for the suppression of crime, for the development of the moral and intellectual capacities of the whole nation: we should save in poor rates, in police, in penitentiaries, in gaols, in hulks, &c. We think that children of every rank of both sexes should pass the national examination and receive their certificate of right of citizenship at or about the age children are usually confirmed according to the rites of the Church of England. All children nationally educated should be certificated of having, uninterruptedly, attended school for eight or ten years, that is from five years old to fourteen or fifteen years old, allowing a year or more for illness or other just cause of absence ere they are eligible to present themselves for their final examination, unless recommended by their preceptors as being properly prepared for the examination. Children educated at the public expense

ought not to be invariably left to the guidance of their natural guardians, because they are not always fit or competent for the charge, hence the necessity of general legal principles to guide and superintend the moral culture of the rising generations. Children nationally educated, should, for the first five years after reception of their certificate of rights of a citizen, be under the surveillance of national guardians, in order that they may not, by adventitious circumstances be placed, or continued with an injudicious, immoral, severe, or heartless employer; and on the other hand, that they may not be allowed to leave their employers from idle fancies or juvenile impetuosity, and thereby throw themselves out of regular employment, and subject themselves to temptations to fall into the vortex of iniquity. Children of the middle classes are subject to the above control of their natural guardians for four or five years after they leave school, and doubtless, much to their advantage, therefore the same wholesome superintendence should be extended to the lower classes of society. It is often argued, that to curtail the liberty of the subject is unjustifiable: in our opinion nothing can justify the neglect of the better informed classes, in allowing their poor and dependent neighbours to bring up their children in idleness and ignorance, and without moral principles, to rob their more fortunate or provident neighbours, and be otherwise a source of serious expense to the parish or county, in supporting or punishing them for their misdeeds sooner or later. The criminal return of the metropolitan police offices confirms the fact, that the common period in both sexes at which they break the laws is from fifteen to twenty years old, when the animal propensities are strongest, and when the moral principles are weakest. According to the returns of a committee of the House of Commons made 1838, on the education of the poor classes, moral tuition is wholly neglected to our poor; for the few that are taught even to read and write are only one in twelve at our large manufacturing towns; and only one in twenty-four receive education likely to be of any use to the scholars; in Leeds, only one in forty-one; in Birmingham, one in thirty-eight; and in Manchester, one in thirty-five. The committee reported,

"1st. That the kind of education given to the children of the working classes is lamentably deficient. 2nd. That it extends, bad as it is, to but a small proportion of those who ought to receive it. 3rd. That without some strenuous and persevering efforts be made on the part of government, the greatest evils to all classes may follow from this neglect."

The committee came to this just conclusion in warning the country of the consequences that must inevitably come to pass as the country becomes more densely populated, (which must necessarily be predominantly of the poorer classes), and according to the return of the Committee of the House of Commons, the proportion which the working classes bear to the whole population appears to vary as follows, in six towns examined:—

Borough of Manchester	. . .	64 per cent.
,, Salford	. . .	74 ,,
,, Bury	. . .	71 ,,
,, Ashton	. . .	81 ,,
,, Staleybridge	. .	91 ,,
,, Duckenfield	. .	94 ,,

These towns were not particularly selected in support of any theory of the committee, but they must awaken the country to a sense of their duty towards the dependent classes, in reverse to principles, hitherto most recklessly pursued by hanging, transporting, imprisoning, and punishing the people for misdeeds, the natural consequence of their neglected condition by all parties. On this subject my views already reiterated, are tersely written in the following article of Douglas errold's.

"Religious rivalries and jealousies have hitherto proved the bane of national education. Catechisms and creeds, with forms of doctrine and rules of faith, have met the public instructor on the threshold of his school, and repulsed him from its entrance. An excessive anxiety for the salvation of souls, through sectarian tutelage and guidance, has perpetuated ignorance as the inheritance of the poor. The clergy, of all denominations, have insisted that the minds of the young belong to their Order, not to the State, and in the struggle for the spiritual welfare of their respective flocks, they have suffered their bodies to undergo all the afflictions that inevitably follow the want of intellectual culture and moral discipline. They seem to have forgotten that good works are a Christian duty, since they keep the people in such gross ignorance that they are unable to distinguish between right and wrong; for all criminal statistics show, that the vast majority of those who have offended against the laws, are destitute of the first rudiments of education. They are kept down to the low level of mere animals, seeking only the gratification of their appetites, with an utter unconsciousness of all moral restraint. Prudence is a word that does not enter their vocabulary. Displaying none of the true dignity of man, they are unfitted to exercise his rights, and are excluded from the political privileges of citizenship. A costly police establishment is rendered necessary to control those who cannot control themselves. In the absence of schools for the young, gaols are constructed for adults. And the whole of this vicious system is, in a great measure, to be traced to those who have resisted state education, prefering popular ignorance to any system of instruction which is not based on the teaching of some Catechism.

"Now we affirm that the State has nothing whatever to do with religion. That is a matter between each individual and his conscience. In this country, where every one is permitted to worship God according to his own conviction, the Government has surrendered all right of interference in what relates to the spiritual hopes and fears of the subject. All that the State has to do is to provide for the temporal happiness of the people, and as that happiness materially depends on popular education, the State is bound to enforce it, in defiance of any protest of the clergy. Society has an equal right to be protected against the evils of ignorance as against foreign invasion, against the domestic as well as against the foreign enemy; and we see as much necessity for education estimates, as

for army and navy estimates. We contend, therefore, that out of the public funds, literary and scientific instruction should be secured to every child, of both sexes, whose parents are too poor to give them that advantage, and further that such instruction should be compulsory. Parents should not be permitted to keep their children from the national schools, since they have no right to be unjust to their own offspring, or to the community at large who suffer from the ignorance of its members A writer in the recently published number of the *Westminster Review*, states that, 'in the factory districts and the collieries, experience has proved that parents earning high wages will send their youngest child to the mills and mines instead of to the school, and, in fact, do so at the present moment when they are not prevented by the law. The tales told by the Children's Employment Commissioners were no fables. We have seen with our own eyes young trappists of five years of age, employed in the dark galleries of a coal mine, whose parents were able to earn thirty shillings weekly, and who applied the wages of their children to the purchase of drink.' It is to prevent injustice of this character that induces us to advocate compulsory education. The law already accords protection to the *property* of minors; why should it not throw its sheltering arm over their minds and morals?"

In Mr. Chadwick's reports the employers or the capitalists are proved to be peculiarly interested in having educated assistants, clerks, and workmen. In that report the answers of A. G. Esche, Esq., an extensive manufacturer in Saxony, go to prove, that the educated Saxon workman will get appointed sooner than the ill-educated good English workman to superintend more responsible and better paid duties. The following question, answer, and observations will serve as sample of the conclusions of all the witnesses examined.

"Is the superior general usefulness of the Saxon or the well educated workman accompanied by any distinction as to moral habits? Decidedly: in the first place they are entirely sober, discreet in their enjoyments, they are more refined themselves, and have a taste for much better society, which they approach respectfully, and consequently find much readier 'entrée;' they play, read, enjoy the beauties of nature, and make parties for excursions, are economical, and consequently honest and trusty. The effects of deficient education is most strongly marked in the Italians, who, with superior natural capacity are of the lowest class of workmen, though they comprehend clearly and quickly, and are able to execute quickly, any work once seen performed, yet their minds, I imagine, through want of training or school education, seem to have no kind of logic, no power of systematic arrangement." This gentleman says that what he means by education is not merely the art of reading and writing, but better general MENTAL DEVELOPMENT, the acquisition of better tastes and of mental amusements, which are cheaper and more refined: respecting robberies, he says, it is invariably amongst the class which is the lowest in education, who get into bad habits very soon, and obliged him to part with them quickly. The following facts of persons taken into custody by the police of Manchester, from January, 1840, to August, 1842, prove

like all statistical tables, that the basis of crime is the want of a general and comprehensive system of education. In that space of time no less than 340 were in custody, of whom only about one in sixty had received, what the reports term a superior education, but what would be usually called a tolerable one. Of the 156 cases of embezzlement which have been noticed in the same period, twelve only have been furnished by the educated, while of the seventy-three run-away apprentices, not one lays claim to this character, and of the 357 persons taken into custody for gambling, principally young men having charge of the property of their employers, not one had received a good education. For the same reason, the want of efficient education, I have been creditably informed, that it is the most difficult thing to find a young man sufficiently honest, clever, and industrious, to superintend a manufacturiug establishment.

The above facts prove of what importance it is to the employers, that their assistants and operatives should receive education liberally, the only safeguard they can have for honest and efficient service. Although we do not expect that education, or any system of education, will insure in all cases prudence, temperance, and social order; we know that the first-rate educational system has failed in members of the first families in the land, to produce probity and good conduct in after life. The exceptions are fortunately rare, and capitalists, and particularly those in a large way of business, are obliged to employ many hands, and generally very assiduously, in warm, close rooms, unfortunately from habit, for very many more hours daily than their true interest requires; since fatigue brings on want of alacrity, and mental and muscular energy, direct sources of great loss to the employer and the employed, by disease. Undue application to work produces capriciousness of temper, offensive manners to customers, and a tendency to lowness of spirits, discontentedness, and drowsiness of mind and body. The want of sleep to restore the energies of the body, to equalise the healthy function of the brain and the various organs, tends quickly to produce not only disease, but an insusceptibility for mental culture and a desire to seek powerful excitements, by strong drinks and gambling.

At Manchester it has been ascertained that in three out of five cases of embezzlement brought up before the magistrates, the prisoners had in their pockets betting-books. It is fallacious to expect people to read in the evening when the mind and body have been over fatigued by the duties of the day for fifteen or sixteen hours.

Let us now consider the probable consequence of conceding more time and leisure by contracting the hours of business to all classes of the employed.

That pleasure is intended for men, and especially for youth, rationally and liberally, is not to be denied; whether then, they will when released from confinement, rush madly into dissipation, will greatly depend upon the degree of labour and length of time occupied; at all events the present system of protraction has been sufficiently proved to engender dissipated habits. Vicious tendencies are often

engendered in youths at a very early age, by well-intentioned but ill-directing parents or guardians, by repressing proper indulgences and recreation; hence in their natural love for some relaxation, they soon commence to practise deception, and when the youths are removed from their auspices, they fall early into bad habits, and get into trouble ere they have well reflected on their situation.

Young men who are accustomed to moderate enjoyment and relaxation, see vice divested of her gaudy colors, unlike the transient viewer who mistakes her shining baubles for real gems.

Morally healthful condition, is most happy when based upon a healthy frame of body, the result not only of organization, but of training, as we are tutored and trained to practise religious and moral habits: omit health in favor of the intellectual and moral faculties, and you provide it is true instruments for the mind, but disease for the body.

SECTION VI.

In considering prison discipline, it will afford us an opportunity to make practical remarks on the physical and moral evils arising from the crowding of human beings, equally injuriously affecting free persons, similarly circumstanced as regards crowding, anxiety, and depression of spirits. Yet one of the most remarkable features in the history of society, is the comparatively happy result of the advance of civilization manifested in the present system of imprisonment of criminals; nevertheless the present degree must only be regarded as evidence of what the application of science is capable, and will eventually do for man, and what it has done in our prisons is exemplified perhaps, more conspicuously than in any other place; when we compare the present condition, health, and longevity of the prisoners with the historical records of the time of the philanthropic Howard, who visited our prisons when very few benevolent persons had the moral courage to risk the very great danger of taking the fatal jail-fever, arising from the filthy, unventilated, crowded condition in which the jails were kept, through total ignorance of the physical laws that govern and ensure health now adopted, but very imperfectly, particularly in respect to moral tuition.

Prisons are now kept comparatively pure, and the long-imprisoned inmates live comparatively longer than they did formerly, yet not so long as people of the same age do out of prison; this fact may in some degree be explained from the circumstance of their previous habits being vicious and drunken.

We must not forget that death is always more common amongst the lower classes under all circumstances than any other.

Although the fatal jail-fever of former days is now not known in this country, still we have its prototype, a fever in a milder form, and scrofulous affections, diseases of the liver, lungs and bowels;

these affections appear to depend upon local miasmata and animal effluvia rather than upon the food of the prisoners; because in certain barracks soldiers are prone to these diseases, although well fed, clothed, and lodged. The miasma seems to become only poisonous to the people when they are congregated rather thickly in prisons or barracks, because it has been observed that the neighbours of such buildings are not particularly affected by such diseases, when the prisoners or soldiers in the adjoining large buildings are severely afflicted. These facts prove the importance of science to aid and guide us to direct and observe properly physical laws, to prevent diseases as well as to remedy them.

Possibly the construction of such buildings may be ill calculated to carry off the carbonic acid gas, exhaled by the numerous inmates; or the gas may be in those identical spots evolved from the earth; or hydro-sulphuretted gas be pent up; certain it is that the same form of diseases occur in crowded sleeping apartments, in common lodging-houses, and in houses with bad drains, and very frequently in houses opposite gully-holes. I am, however, more disposed to attribute the propagation of the diseases by miasmata emanating from the bodies of the inmates, in over-crowded, close or badly ventilated rooms.

The above facts suggest to us, that our unions, prisons, barracks, and particularly our hospitals, are too large, accommodating too many inmates at a time, which may engender or nurture disease. Hospitals should not be larger than, or exceeding, our ordinary houses, at the utmost, two story high; because surgical operations, and the treatment of wounds are always more successful in private houses than in hospitals; and we have no doubt that the treatment of all diseases would be more successful in small, than in large hospitals, and far more economical and useful than the ostentatious buildings that we have. Another great advantage that would follow the comparatively small receptacles for invalids, is that they would be more numerous, and consequently more convenient for the poor inhabitants to avail themselves of them; and there would be more medical men engaged to attend to the patients, and do full justice to them, by being paid for their attendance, rather than as now, a few appointed to attend many patients in a few places gratuitously, as a stepping-stone, to private practice; hence the indecent speed of medical officers, in running over wards, and often overlooking the true interest of the helpless invalids.

Such injustice to the patients must, in the nature of things be risked, until medical men have the same interest as in private practice, to devote deliberately all their mental energies, which without pay, cannot be expected from them, to each patient: medical men, therefore, should be liberally paid for their public and private service. Gratuitous medical service, should be valued by the public, at no higher price than the donor estimates it, therefore, it never should be either accepted or proffered.

The Clergy and Lawyers very properly exact equitable payment

from the governors of medical institutions; the same equitable principles should be observed by governors of hospitals towards members of the medical profession, from whom they should exact constant attendance of at least two of the medical staff, and at all dispensaries, one medical officer, for the sake of the poor patients.* Now, to return to the system of imprisonment and transportation of criminals, we are reminded that it has been truly said that the worst use of man, is to hang him! We think the next worse uses of man, is to whip him, and imprison him, either in wards or solitary cells of jails, and waste his time, or physical strength on the tread-mill, or otherwise, uselessly to himself, and to the community. It appears to us that the nation in justice, has no right to punish criminals, since it permits families to bring up their children to beg, and thieve about the streets, without taking the slightest care or charge of them, when children are not taught some trade, or means of earning their livelihood, or their relative duties, and interest to serve God and their fellow-creatures, they must necessarily fall into evil practices. When the poor are properly provided with the physical requisites of life, and taught their religious duties, and fall into evil ways, then even the nation would do better than whip them, by granting further tutoring to them in religious truths, by clergymen judiciously selected for such duties, or by amiable, industrious, well-disciplined teachers, systematically taught for the administration of the very important duties of a schoolmaster for criminals. We would suggest that the criminals should be classed in sections according to their age, crime, repetition, character, and susceptibility for improvement: each section should be in separate classes at the school, and prohibited from speaking to one another at work, meals, and rest at night. The duty of each day should commence at five o'clock in the morning in the summer, and six o'clock in the winter; and cease at eight o'clock in the summer, and nine in the winter, with the delivery of a moral lecture on the duties of man to his Creator and fellow-creatures, terminating with a prayer.

Tuition should likewise commence the duties of each day, and continue until eight or ten o'clock then breakfast, afterwards those who may be in most need of education should continue all the day in the scholastic and theological classes. All the inmates should, every evening undergo a strict examination on the subjects they had been on that day, and previously instructed in. All should be well grounded in the elementary scale of knowledge already suggested for the pupils in the national schools. Criminals, after having obtained a degree of proficiency, tested, however, by the chaplain or superintendent of the school for the criminals, may then be forwarded to the public works either at home or abroad.

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* Consistent with this principle of equity for medical advice, the writer has adopted the system of seeing all patients, who cannot pay his usual fee of half-a-guinea, from eight to ten o'clock in the morning, for a very mitigated fee.

After prayer, and theological instruction (before breakfast) always proceed to field-work, or into the workshops prepared with tools, materials, and instructors in the various callings of artisans, in classes according to their age, and character of their crime. Employment should be carried on always in perfect silence, conversation being only allowed with their teachers for instruction. The teachers may be selected from prisoners undergoing correction, or having received the same, provided they are recommended by the superintendents or authorities over the said house of correction, as having given evidence of contrition for their former errors, not by words, but by conduct, industry in acquiring instruction, and industrious habits, to earn by self-dependence a livelihood. If teachers cannot be supplied from within the house, or they are objected to, they must be supplied from other sources, as normal national schools.

Prisoners committed for a short time, by magistrates, should attend the schools, and the workshops, to learn a trade, to earn their livelihood, if not already acquainted with one, ere they are allowed to leave the prison. In no instance should prisoners be allowed to leave the house of correction without having acquired the national standard of educational knowledge, or some trade, by which they may support themselves, or be allowed to return to society at large, without the authorities over the house of correction, receiving a satisfactory guarantee from relations, friends, or from their parish, that means will be provided, by which the prisoner will have an opportunity of supporting himself, and retrieve his lost character, and the confidence of his fellow-creatures. The parish or rather the county of the prisoner, should by law find him work, either with private individuals, or in public works, or in the army or navy; until such employment is found, the prisoner is to be retained in prison, in active employment, receiving instruction, or in some other place of protection under direction of public officers.

Prisoners who are committed after their trials to prison under, and for, seven years, should be classified, and undergo the course of instruction in the school, and workshops, and provided afterwards with occupation in the same manner as suggested for prisoners committed by magistrates. All prisoners adjudged for more than seven years, (*i. e.* 14 or 21 years) transportation, or for life, should in the first instance attend the school in classes, according to their crime learn to read and write, also receive religious educational course, and instruction, in the workshops and grounds attached for working; and taught Smith's-work, Stone-mason's, Bricklayer's, Carpenter's, Tailor's, Shoe and Harness-making, Farming-business, also the work of blasting rocks, and certain work of miners, that are attended with danger in execution to the workmen, as well as every other work known to be dangerous; also all occupations that are known to be deleterious to the health, or which may shorten the life of the free workman, as knife, fork, file, and needle grinding, repairing of sewers, wells, emptying cess-pools, and work of water-guilders,

and glaze-card makers, and such works that use Mercury and lead, and every other noxious occupation.

Fork and file-grinders very seldom live beyond the age of forty, and generally die about thirty years old. All occupations that prove injurious to health, and cause premature death of workmen, should be done by criminals. Respectable labourers ought not to be compelled or allowed, to be engaged in work that either injures health, or shortens life, and thereby cause their families, widows, and children, to become a burthen upon the industrious classes, and the capitalists.

Christian and charitable feelings alike protest against it, particularly when too many can be found, who have forfeited their liberty, and even their lives to the offended laws of their country; and they alone should perform all the noxious trades and duties that the convenience of the public may require.

Criminals should also be taught to perform the duties of soldiers, and sailors, in order that foreign service in unhealthy places may be performed by them: and no doubt since there are many prisoners having received a superior education, and connected with some highly respectable families, doubtless, trust-worthy officers may be selected from amongst them. Thus our brave, honest defenders' lives may be economised, and the expense of supporting their widows and children be saved; together with the great national expense of such duties.

Able-bodied prisoners should also be made to protect our emigrants in our colonies, from the natives; as well as made to work, and assist the emigrants in the different occupations taught *them* in the schools for criminals.

They may also be employed as already suggested, to remove the cause of the plague in Egypt, Syria, and Turkey; and the Asiatic Cholera at Jessore in India. These sources of pestilence, are, doubtless, capable of removal, since they are traced to a limited portion of those countries: and if the criminals of one country, are not sufficient, let all civilised nations join in the expense, and send their criminals to effect the benign purpose, since all are equally interested in removing the source of premature death, and great interruption to commerce by the ill-advised, vexatious, and useless sanatory regulations enforced by Eastern nations. Thus murderers would be employed in the means of saving the lives of millions; and heinous criminals render all in their power to compensate for their transgressions against the laws of society.

The employment of people supported at the public expense should be effected without lessening the demand for free labor of the self-dependent industrious artisans, or trading classes. We conceive that the most heinous criminals might be employed, to save the lives of free-laborers (without injuring the demand for healthy, and proper occupations) with economy and usefulness to the state. Since unhealthy, degrading, and disgusting duties are necessary for the public weal and convenience, surely the worst or unreclaimed

delinquents are the most proper objects to perform them, rather than industrious laborers.

All prisoners committed for a longer period than is necessary for acquiring the national standard of educational and theological information, should be employed, under the direction of commissioners, appointed and paid by government, to subdue and recover land into a state of productive agricultural condition, by clearing, burning, draining, manuring it &c., according to the most approved modern principles: thus thousands of hills, fens, and bogs may be brought into a state of remunerating productiveness, and repay the first and future cost of management, and give occupation, first to criminals, and afterwards to thousands of free laborers. Hills and bogs, should be rented on a very long lease, or purchased by the counties, to occupy their respective prisoners; at whose expense the latter are always supported during the whole period they are debarred of their liberty. Capital for the first cost of such works may either be raised for the purpose, by a county cess, or advanced by government, at interest to the counties, and returned from the profits of culture, or of rents arising from settling free-laborers on the recovered land. Original proprietors of unproductive, and recoverable hills and bogs, shall be obliged, by an act of parliament, to sell on lease such land, at a fair valuation, according to the scale of clear income derived from feeding sheep and cattle, or sale of turf, brush-wood, or heath, and such surface produce, upon the average of the last seven years. In the like manner counties shall lease for certain equitable terms, or buy, wet land for the purpose of draining, and clearing it, &c., and afterwards, let such lands to paupers to culture, under the direction of a scientific appointed officer; and out of the improved rents, re-imburse all expense and interest of capital in recovering it, with certain profits to cover any loss arising from unproductive capital so laid out. Many thousands of wet unproductive farms there are, producing but a miserable rent to the proprietor, and return for labor to the tenant, for want of capital and knowledge of science appertaining to agriculture. The tenant for want of these cannot make the land productive, and the freeholder is in like condition, or unwilling or indifferent about it. Therefore the authorities of counties, for the advantage of employing their criminals to cover the expense of their keep, and breaking their idle habits, would be doing much good to the public and landlord; the latter may pay interest upon the capital expended for a given number of years, and the principal out of the improved rents.

That the plan has already proved to be practicable, and rendered the Irish tenants of this society peaceable, sober, industrious, social, orderly, and morally elevated, by being supplied with land and pecuniary means, to use their physical powers in reclaiming useless bogs to sustain life with great profit, as the following report of the 'Irish Waste Land Improvement Society" amply proves,—

"No tenant of the Society has received the slightest aid or alms from

the Government, or any charitable funds; but in the periods of the greatest difficulty had been rescued from distress by fair wages for labor, and the produce of their own little farms. Three thousand persons dwelling on the Society's estates, which only a few years since were mostly wild and barren wastes, are now pursuing their wonted avocations in order and peace. The habits of the people are improved, by instruction given both by precept and example, and the laws of the country are respected and obeyed, as is now the case, and was not the case when the Society commenced its operations. At Ballinakill, the school-house, with a dwelling-house for the master, are both completed, and 150 of the peasants' children are already receiving instruction therein. In 1838 this site was a *grouse mountain*—now it contains 635 plantation acres, which are let. At Kilkenin there are 2296 plantation acres reclaimed and let: the profit this year (1845) amounts to 3*l.* 10*s.* per acre; four years since these *bogs produced nothing*."

Now there are about thirty millions of acres in the united kingdom in a wild uncultivated state, and capable of employing all unemployed hands, with profit to the laborers and to the country, and even paying off the national debt much sooner than any plan now adopted or dreamed of for that purpose, merely by government advancing in the first instance capital which is sure to make a handsome return, a fact which our legislature have never known in carrying on war or scarcely in any other matter: again, embankments on the sea coasts or on rivers, either to recover or to preserve land, may be contracted for, and kept in repair, chargeable upon the landed proprietor benefitted by the outlay. Many other feasible means will doubtless suggest themselves if the principle of thus employing criminals should hereafter be entertained. Sewers of towns should be made to terminate in one or two depôts prepared by independent labor. Decomposition of the soil and its preparation for manure by a chemical process should always be at a good distance from towns and dwellings, and should the process be found to affect the health of the workmen, it should be superintended by criminals: the profits of sale should be paid to the county to defray their expense. We have but a small proportion of the whole of the united kingdom in the highest state of cultivation, for want of capital, and scientific knowledge, how to bring land into a high and remunerating cultivation. It is, however, a gratifying fact that agricultural knowledge has progressed in this country in a greater degree than in any other country in the world, for we perceive that although our population has immensely increased during the last twenty years, still our imports of bread stuff is now but little increased and not likely to increase for many years to come, since the quantity of land in a proper state of cultivation is so little, and the capital and the energies of the people so great.

Female prisoners should attend scholastic and theological schools superintended by efficient female teachers from a normal school, and taught or improved in house and needle work, knitting stockings basket and toy making; these latter articles are principally imported into this country, therefore our own producers would not be injured

by so employing the criminals. Stockings and other knitted articles of dress bear a good price, from wearing better than those made by machinery: other means of employment for female criminals will be suggested in addition to those already in use for the lesser crimes. For the more heinous crimes, punishments should be severely continuous; washing for hospitals, all kinds of occupations which are unhealthy, and all such employment too degrading for honest producers, and all such necessary occupations that the convenience and health of the community may require.

The condition of the independent producers should be nationally insured, always to be better than that of prisoners, lest the former be tempted to commit crime for the sake of the extra comforts of a prison. Therefore in the management of criminals, care should be taken that their occupation should be continuously severe for at least sixteen hours a day, and with special regard for utility to themselves as means of livelihood, and also in mental, religious, and moral acquirements; and secondly, their physical power should not be expended in useless work, as the treadmill &c. for it engenders a disgust in the minds of the criminals, and a reaction of revengeful feelings towards the public, in the like spirit in which it is imposed upon them. Utility of occupation will prevent this undesirable spirit and favor contrition, and at the same time will break somewhat the force of idle, vicious habits, and engender a sincere desire to acquire habits and means for real support, and lessen the public expenditure for their support contributed by the humble shopkeepers with severe privation under the present system, which is somewhat thus: a criminal is detected, apprehended, committed, thrust into the company of those probably more hardened in vice than himself, tried, convicted, and punished—let us suppose by imprisonment. He eventually comes out, and generally more depraved and corrupted than before; none will employ or trust him; he again steals in self-defence, for he cannot starve; he may now forfeit his life, or he is driven a disgraced outcast to a penal colony. The object of the nation hitherto has been to deter by fear on the one hand, and condign punishment upon the other. Have the laws ever sought to prevent the commission of crime by duly instructing the people in the knowledge of their duties, and by encouraging them in their exercise? certainly not: and moreover the science of political ethics has too often set all principles of justice, not to talk of mercy, at defiance. "Vengeance saith the Lord is mine." Men should not dare take violent measures to restore a religious or social or moral feeling, particularly since we know that the most brutal and horrid system of flogging has never been known to make a good out of a bad man. brutal revenge destroys self-respect and confirms a thief or a drunkard in his vicious habits, which the long experience in the army amply testifies. The moral nature of man may be benignly touched by convincing him through kindness that you have a care for his soul, personal comforts, and respectability, and by pointing out the way to be happy by teaching him his religious, moral, and social duties.

The poor should not be allowed to proceed from the earliest to th latest period of their lives in ignorance, or left to chance, or to the dic tates of their animal propensities, a mighty source in their condition o evil and sorrow. A national rudder should first guide them into a well regulated effective school; secondly, superintend their juvenile ini tiation into industrial life, and protect them from too great labor an insufficient wages from exacting employers; and lastly prevent then contracting early marriages. It is maintained by many tha the state cannot consistently interfere with private rights of the abov descriptions, but it appears to us to be incontestably the duty of th state to protect the general welfare, and more particularly when th claims of humanity are so imperious in demanding the suppressio of a wide-spread and terrific system of vice arising from neglect.

Fortunately the most intelligent members of society do not estimat the working classes according to their numbers and producing powers but as beings endowed with other and nobler faculties than mer physical strength, worthy of a humane system of legislation, appeal ing to the affections of the people, and restricting individuals fro doing or aiding in any act that might be injurious to other member of the community.

Private rights fortunately are already restricted by government for instance gambling houses and lotteries are suppressed becaus they are obnoxious to the public morals. In fact government ha recognised the principle, that no individual has a right to exercis any art or calling, manifestly injurious to the health or morals of th community under the baseless fabric of private right, except quack ery, hence we have practitioners of homœpathy, hydropathy, anima magnetism, and concocters of pills and potions, to deceive, plunder and murder the people, yet commanding the patronage and confi dence of parties who from their position, ought to be the leaders i enlightened society. However, the more the counsels of our legisla tive body, are well regulated by just views of its parental as well a economical ministrations—of its duties to the man, as well as to the state—the more shall we find that the legislature will exercise a wis discretion in forbidding the indulgence of personal rights that ar productive of great social calamity! Therefore the state has in ou opinion, a right, nay a duty, to regulate the education of the people their hours of labor, their wages, and even its partial expenditure at any rate as far as setting aside a certain sum as a reserve for thei future wants in an insurance office, or benefit club; also to regulat their marriages with respect to their pecuniary condition and ages in order to save mighty evils to the present and future rising genera tions: thus testified by Mr. Waddy, Surgeon to the Birmingham Lying-in Hospital, in a communication published in the Lancet (June 20th., 1846) a statistical report of the married women wh are received into that charity alone, says that the patients are generally "poorly fed, clothed, and lodged, and many of them are employed in manufactories, and exposed to circumstances of a moral and phy sical nature extremely detrimental to their health and comfort," the

following amongst other facts appear. "*Age of marriage*: Of 528 females, 1 had married at fourteen years of age: 4 at fifteen: 13 at sixteen: 44 at seventeen: 85 at eighteen: 91 at nineteen: 97 at twenty: 76 at twenty-one: 55 at twenty-two: 36 at both twenty-three and twenty-four: and 33 at twenty-five: beyond which age the number of marriages greatly diminished, and only one married respectively at the ages of thirty-two, thirty-four, thirty-seven, and thirty-eight."

Of 574 males at Birmingham, it was also ascertained that one had married at fifteen years of age: 3 at sixteen: 12 at seventeen: 28 at eighteen: 42 at nineteen: 84 at twenty: 52 at twenty-one: 60 at twenty-two: 52 at twenty-three: 51 at twenty-four: 44 at twenty-five: 34 at twenty-six; and 31 at twenty-seven: beyond which period there was a material diminution, and only one married respectively at the ages of thirty-nine, forty-two, and forty-four."

The early age at which some marriages appear to have taken place, will astonish the reader. In small factories the males and females work together, hence the sexual appetites are early developed. In large factories the males and females are at work in separate rooms, which tends to ensure comparatively, a better moral order amongst the employed than can be obtained in small factories where apprentices of both sexes soon marry, however ill-assorted, and often by compulsory interferences. Early marriages are extremely prejudicial to health; labour proves often tedious, difficult, and dangerous, and the offspring weak and sickly, and die early or live with a bad constitution in misery and wretchedness, ignorant and vicious. Conditions like these form an almost impenetrable barrier to the reception of moral and religious truth, and it is most worthy the attention of the legislature to find a remedy for a system so burdened with social evil.

SECTION VII.

The legal machinery of this country is enormously expensive, heartless, injurious, and immoral in effect upon the people. I have received the following facts in 1845, in answer to queries from a very intelligent yeoman near Handcross, Sussex, who has had much experience in parish and county business, testifying the truth of the German proverb.

"The more laws, the more sins,
The more laws, the less justice."

He writes thus—

My Dear Sir,

I now fulfil my promise to detail to you how Criminal Justice is executed in the agricultural districts. February last I was summoned to serve on a Jury, at the Lewes Adjourned Sessions, the calendar contained 46 cases of persons charged with felony; 25 of these cases were

tried in the Court in which I sat as Juror, the whole property stolen by these 25, did not amount to £5, and I learned from a Juror in the other Court, that theirs were less, some of these cases were of the most trifling nature, in one, two eggs, another, a lad, a gallon of potatoes, worth three-halfpence, this was one of peculiar hardship, as the master of the lad owned that he owed him 15s., which I dare say was five weeks earnings, and yet this heartless fellow could prosecute the poor boy, whom his own injustice had driven to steal. I was determined such a case should not pass without observation, and prevailed on the Jury to express regret that the boy was not paid; however, he was sentenced to a short imprisonment. The whole of the cases (with the exception of one) were of the most trifling nature. But not so is the cost to the County, or the consequences to the poor, the most of whom were young creatures; I could not reflect without mortification, that society had never done anything for these unfortunates, but punish them. And that of the class of those who sat on the Bench, many would turn out foxes to destroy our poultry, or ride by dozens over our land, and do ten times the mischief that many here were charged with, and would take it as an insult, if any attempt were made to stop them. At the next Sessions, in the end of March last, Robert Poole, the father of my servant girl, was tried for taking three sticks, worth one half-penny each, and sentenced to four months imprisonment: he took, or stole these from a Magistrate, and of course had no lenity shown him. My neighbour Juniper, is just now returned from serving on the Jury, and he states that they had scarce anything, but these paltry cases, I shall get the calendar from him, and shew you, when you come down. I think this state of things incontestibly proves that although the Rights of Property are strenuously (I should almost say cruelly) enforced, the duties of Property, are much neglected, for I would undertake to say, that if the whole of these cases were analyzed, it would turn out, that most of the unfortunate parties were unable to get employment, and consequently unable to get the common necessaries of life.

I remain Dear Sir, with much regard, Your Obedient Servant
Ashfold, September 28th, 1845. PHILIP BARBER.
To Dr. Evans Riadore, 73, Harley St.

Police Magistrates, Justices of Peace, and others, seem to think, that the only duty they have to perform towards the humbler classes, is to keep them in order by punishment, rather than by a more benign and philosophic spirit, in adopting the notion, that the good conduct of those in a subordinate station is more likely to be secured by showing them that they are the subjects of kind consideration, than by treating them as persons who are only to be disciplined and controlled by constant severity. Indeed it is too much the custom to treat every injury done by the poor on the rich, as a crime which the utmost vigour of the law must be employed to suppress, while any outrage by a wealthy offender on the peace or property of an humble individual, is treated as comparatively venial from its alleged absence of the motive, which is in fact, allowing the very wantonness of the act to be considered a palliation of its criminality. Magistrates should deal out the same measure of justice to those who do wrong to the poor, as to the poor themselves,

when offending against their superiors; it would then be understood by all classes, that there would be neither comparative impunity for the one, nor undue harshness for another.

To imprison children, and young people, whether driven to commit crime, by neglect of the *duties of property* or not, is to compel them to associate with offenders against the laws; those in the lowest state of moral degradation are associated with the most venial offenders; persons who have been prisoners, must inevitably be less desirable associates to the community after their incarceration, according to the present system, than before. Thus they become shunned by those who might be able to serve them, consequently they are forced to renew acquaintance with their former, or worse associates, and eventually become confirmed malefactors to pollute others, and future inmates of prisons, thereby a continued source of expense to the country. Thieves are made by neglect of government, in short, as the German proverb says, we hang little thieves, and take off our hats to great ones.

The following cases reported in the *Times* December 23rd, 1845, confirm the injustice to the community of imprisoning criminals, and allowing them, at the end of their incarceration to be sent forth, unprotected, and unprovided with means to earn their livelihood, or taught by instruction, and example, their duties to themselves and to the public.

Eliza Jones, Mary Hayes, Eliza Montagu, and Martha Pike, who had just been released from ten day's imprisonment, at Brixton, for window breaking, were charged with wilfully breaking three panes of glass in the shop of a biscuit baker in St. Paul's Church-yard.

The officer produced the stones with which the mischief was effected. They weighed nearly a pound each.

Mr. Alderman H. Hughes enquired the value of the glass?

Mr. Inglis said the panes cost him about £14., and he could get them replaced for £12. One of the girls came into the shop, and begged for a few stale buns before the attack was commenced. He had no stale buns to give them.

The prisoners, who were vagrants, said they had no home, no parish, and they were hungry.

Mr. Alderman H. Hughes observed that they had wantonly inflicted a grievous loss on a tradesman, who was contributing largely in rates to the support of the poor, and if their object was to be in gaol on Christmas-day and to make sure of being committed, he would take care that they should be disappointed. He would give orders that they should be strictly excluded from partaking of the Christmas fare, and that they should be kept to hard labour for two months.

The Magistrate's remarks are severe, and uncharitable, and the award revengeful. The house-keeper is obliged to pay the poor rates, he neither takes the house to benefit the landlord, or the poor of the parish, but to live in, on private income, or on that arising from his trade. The poor deluded girls ought not to have been liberated from their late prison, and then turned out to steal, and beg in the

streets. In this and other large towns, and country districts, many children are daily brought before magistrates for petty thefts: they generally belong to very poor parents who are unable to support them, therefore they are sent into the streets to sell matches, and to watch for opportunities to steal; the parents of many of them do the same, never having followed or learned a trade to support themselves; others there are who adopt this mode of life from choice and indifference to the welfare of their children and themselves.

In this rich country, which boasts of taking within its comprehensive grasp, the distressed and afflicted of all classes, is it not extraordinary, that thousands of children are deplorably brought up, in large towns, to certain destruction.

It is unworthy of our great nation, nay a loss, to allow the streets to be crowded with poor half-naked people and children, without physical or moral aid to guide them out of the road of destruction, and into the way of self-respect and dependence; in short, disregarded and left to encourage one another in the practice of vice and depravity, until taken up by the police, tried, committed, and imprisoned for a term; and then turned out worse than before, they are re-taken, and re-imprisoned at a great expense to the county, until repeated crime renders them incorrigible. Society thus becomes responsible for the contamination to which poor children are subject. There is not in the social circle, a calamity in magnitude comparable with the evils that spring from allowing children to prowl the streets in idleness, at an age when the mind is flexible to any impression of good or evil, or one that deserves more the benevolent attention of some high-minded man to apply to the legislature to remedy such a crying evil, and national disgrace. Certainly the representatives of the people cannot be more admirably, more benevolently employed, than in devising the means of correcting the awful evil, which is always before the eyes of the magistrates. We would recommend to magistrates in the mean-time, when such unfortunate cases are brought before them, not to address the prisoners in that imperious, or revengeful spirit, which we have often had so much reason to deplore; such conduct does not become their office, and serves only to excite the worst feelings of the prisoners, and the indignation of the public; since the prisoners are the natural results of their neglected condition, as was the case with the poor, deluded, ignorant girls, brought before the Alderman, exposed to the dire necessity of breaking the laws, for the purpose of being provided with the necessaries of life!

The following paper copied from "Chambers's Edinburgh Journal, number 87, New Series, August 30th, 1845," will amply prove that young thieves and vagabonds, by tuition, kindness, and example, may be rendered honest and generous.

THE RAUHE HAUS OF HAMBURGH.

"The following account of the Rauhe Haus or Redemption Institute of Hamburgh reads like something from a different sphere; but, in

reality, it is part of a very sober document—a Report on Education in Europe, prepared from personal observation by the Hon. Horace Mann of Massachussetts, and presented last year to the secretary of the Board of Education for that state. As very few copies of Mr. Mann's report have found their way to this country, the extract may be regarded as equal to so much original matter; not to speak of its absolute interest, which, it seems to us, could hardly be over-estimated:—

The school of Mr. J. H. Wichern is called the 'Rauhe Haus,' and is situated four or five miles out of the city of Hamburgh. It was opened for the reception of abandoned children of the very lowest class—children brought up in the abodes of infamy, and taught, not only by example but by precept, the vices of sensuality, thieving, and vagabondry—children who had never known the family tie, or who had known it only to see it violated. Hamburgh having been for many years a commercial and free city, and of course open to adventurers and renegades from all parts of the world, has many more of this class of population than its own institutions and manners would have bred. The thoughts of Mr. Wichern were strongly turned towards this subject while yet a student at the university; but want of means deterred him from engaging in it, until a legacy, left by a Mr. Gercken, enabled him to make a beginning in 1833. He has since devoted his life and all his worldly goods to the work. It is his first aim that the abandoned children whom he seeks out on the highway, and in the haunts of vice, shall know and feel the blessings of domestic life; that they shall be introduced into the bosom of a family; for this he regards as a divine institution, and therefore the birthright of every human being, and the only atmosphere in which the human affections can be adequately cultivated. His house, then, must not be a prison or a place of punishment or confinement. The site he had chosen for his experiment was one enclosed within high strong walls and fences. His first act was to break down these barriers, and to take all bolts and bars from the doors and windows. He began with three boys of the worst description; and within three months, the number increased to twelve. They were taken into the bosom of Mr. Wichern's family; his mother was their mother, and his sister their sister. They were not punished for any past offences, but were told that all should be forgiven them, if they tried to do well in future. The defenceless condition of the premises was referred to, and they were assured that no walls or bolts were to detain them; that one cord only should bind them, and that the cord of Love. The effect attested the all but omnipotent power of generosity and affection. Children from seven or eight to fifteen or sixteen years of age, in many of whom early and loathsome vices had nearly obliterated the stamp of humanity, were transformed not only into useful members of society, but into characters that endeared themselves to all within their sphere of acquaintance. The education given by Mr. Wichern has not been an œsthetic or literary one. The children were told at the beginning that labour was the price of living, and that they must earn their own bread, if they would secure a comfortable home. He did not point them to ease and affluence, but to an honourable poverty, which, they were taught, was not in itself an evil. Here were means and materials for learning to support themselves; but there was no rich fund or other resources for their maintenance. Charity had supplied the home to which they were invited; their own industry must supply the rest. Mr. Wichern placed great re-

liance upon religious training; but this did not consist in giving them dry and unintelligible dogmas. He spoke to them of Christ as the benefactor of mankind—who proved by deeds of love his interest in the race, who sought out the worst and most benighted of men to give them instruction and relief, and who left it in charge to those who came after him, and wished to be called his disciples, to do likewise. Is it strange that, enforced by such a practical exemplification of Christian love as their fatherly benefactor gave them in his every-day life, the story of Christ's words and deeds should have sunk deeply into their hearts, and melted them into tenderness and docility? Such was the effect. The most rapid improvement ensued in the great majority of the children; and even those whom long habits of idleness and vagabondry made it difficult to keep in the straight path, had long seasons of obedience and gratitude, to which any aberration from duty was only an exception.

As the number of pupils increased, Mr. Wichern saw that the size of the family would seriously impair its domestic character. To obviate this, he divided his company into families of twelve, and he has erected nine separate buildings, situated in a semicircle around his own, and near to it, in each of which dwells a family of twelve boys or of twelve girls, under the care of a house-father or house-mother, as the assistants are respectively called. Each of these families is, to some extent, an independent community, having an individuality of its own. They eat and sleep in their own dwelling, and the children belonging to each look up to their own particular father or mother, as home-bred children to a parent. The general meeting every morning—at first in the chamber of Mr. Wichern's mother, but afterwards, when the numbers increased, in the little chapel—and their frequent meetings at work, or in the play-ground, form a sufficient, and, in fact, a very close bond of union for the whole community. Much was done by the children themselves in the erection of their little colony of buildings; and in doing this, they were animated by a feeling of hope and a principle of independence in providing a dwelling for themselves, while they experienced the pleasures of benevolence in rendering assistance to each other. Mr. Wichern mentions, with great satisfaction, the good spirit of the architect who came upon the premises to direct in putting up the first house. This man would not retain a journeyman for a day or an hour who did not conduct himself with the utmost decorum and propriety before the children who were assisting in the work.

Instruction is given in reading, writing, arithmetic, singing, and drawing—and in some instances, in higher branches. Music is used as one of the most efficient instruments for softening stubborn wills and tender feelings; and its deprivation is one of the punishments for delinquency. The songs and hymns have been specially adapted to the circumstances and wants of the community, and it has often happened that the singing of an appropriate hymn, both at the gathering in the mother's chamber, which were always more or less kept up, and in the little chapel, has awakened the first-born sacred feeling in obdurate and brutified hearts. Sometimes a voice would drop from the choir, and then weeping and sobbing would be heard instead. The children would say they could not sing—they must think of their past lives, of their brothers and sisters, or of their parents living in vice and misery at home. On several occasions the singing exercises had to be given up. Frequently the children were sent out to the garden to recover themselves. An

affecting narrative is recorded of a boy who ran away, but whom Mr. Wichern pursued, found, and persuaded to return. He was brought back on Christmas eve, which was always celebrated in the mother's chamber. The children were engaged in singing the Christmas hymn when he entered the room. At first they manifested strong disapprobation of his conduct, for he was a boy to whose faults special forbearance had been previously shown. They were then told to decide among themselves how he should be punished. This brought them all to perfect silence, and after some wispering and consulting together, one, who had formerly been guilty of the same fault of ingratitude under still less excusable circumstances, burst out in a petition for his forgiveness. All united in it, reached out to him a friendly hand, and the festival of the Christmas eve was turned into a rejoicing over the brother that had been lost but was found. The pardon was not in words merely, but in deeds. No reference to the fact was afterwards made. A day or two after, he was sent away on an errand to the distance of half a mile. He was surprised and affected by this mark of confidence; and from that time never abused his freedom, though intrusted to execute commissions at great distances. But he could never after hear certain Christmas hymns without shedding tears; and long subsequently, in a confidential communication to Mr. Wichern respecting some act of his former life (an unburdening of the overladen conscience, which was very common with the inmates, and always voluntary; for they were told on their arrival that their past life should never be spoken of unless between them and himself), he referred to the decisive effect of that scene of loving-kindness upon his feelings and character.

One peculiar feature of this institution is, that the children are not stimulated by the worldly motives of fame, wealth, or personal aggrandisement. The superintendent does not inflame them with the ambition that if they surpass each other at recitation, and make splendid displays at public examinations, they shall, in the end, become high military officers, or congress men, or excite the envy of all by their wealth or fame. On the other hand, so far as this world's goods are concerned, he commends and habituates them to the idea of an honourable poverty; and the only riches with which he dazzles their imaginations are the riches of good works. He looks to them as his hope for redeeming others from the sphere whence they themselves were taken; and there have been many touching instances of the reformation of parents and families, for whom the natural affection first sprung up in these children's hearts, after they had learned the blessings of home and what the ties of nature really are.

One of the most interesting effects of this charity is the charity which it reproduces in its objects: and thus it is shown that, in the order of nature, the actions of good men—provided they are also wise—not less than good seed, will produce thirty, or sixty, or a hundred fold of beneficent fruit. Mr. Wichern makes a great point of celebrating Christmas, and the friends of the school are in the habit of sending small sums of money, and articles of various kinds to adorn the festival. This money has often been voluntarily appropriated by the children to charitable purposes. They frequently give away their pennies; and instances have happened where they have literally emptied their little purses into the hands of poverty and distress, and taken off their own clothes to cover the naked. On one occasion, six poor children had been found by some

of the scholars, and invited to the Christmas festival. There they were clothed, and many useful and pleasing articles, made by the givers, were presented to them. One of the boys read a passage from the history of Christ, and the Christmas songs and other songs of thanksgiving and praise were sung. To the sound of the organ, which a friend had presented to the little chapel, some verses welcoming the strangers succeeded. The guests then departed, blessing the house and its kind inhabitants; but who can doubt that a voice of gladness, more precious than all worldly applauses, sprang up unbidden and exulting in the hearts of the little benefactors?

But among numerous less conspicuous instances of the change wrought by wise and appropriate moral means in the character of these so lately abandoned children, the most remarkable occurred at the time of the great Hamburgh fire, in May 1842. In July 1843 I saw the vast chasm which the conflagration had made in the centre of that great city. The second day of the fire, when people were driven from the city in crowds, and houseless and half frantic sufferers came to the Rauhe Haus for shelter, the children—some of whom had friends and relatives in the city, became intensely excited, and besought Mr. Wichern for leave to go in and make themselves useful to the sufferers. Not without great anxiety as to the force of the temptations for escape or for plunder, that might assail them in such an exposed and tumultuous scene, he gave permission to a band of twenty-two to accompany him, on condition that they would keep together as much as possible, and return with him at an appointed time. This they readily promised; nor did they disappoint him. Their conduct was physically as well as morally heroic. They rushed into the greatest dangers to save life and property, and though sometimes pressed to receive rewards, they steadily refused them. At stated intervals they returned to the appointed place to reassure the confidence of their superior. On one occasion, a lad remained absent long beyond the time agreed upon, but at last he appeared, quite exhausted by the labour of saving some valuable property. Mr. Wichern afterwards learned from the owner—not from the lad—that he had steadily refused the compensation offered to, and even urged upon him. When the company returned home at the appointed time, he sent forth another band under the care of a house-father, and these exerted themselves in the same faithful and efficient manner. This was done as long as the necessity of the case required. From this time the Rauhe Haus was the resort of the poor and homeless—and not for days only, but for weeks. The pupils shared with them their food, and even slept upon the ground to give their beds to the destitute, sick, and injured. I can hardly refrain from narrating many other facts of a similar character connected with this institution; for if the angels rejoice over a rescued sinner, why should not we partake of that joy when it is our brother who is ransomed?

In his last report, Mr. Wichern says the institution was actually so impoverished by the demand made upon it at that time, and the demands upon public charity have since been so great in that unfortunate city, that the inmates have been almost reduced to suffering for the necessaries of life, particularly as he was induced to receive several children rendered homeless by that calamity. To this object, however, even the children of the house were ready and willing to contribute portions of their wardrobe, and they submitted cheerfully to other privations. Mr.

Wichern regretted above all other things the necessity of refusing many applications—and it is but doing justice to the citizens of Hamburgh to state, that on an appeal made by him for funds to erect a new building, they were generously and promptly raised by those who had such unusual claims upon their charity.

A single remark I must be allowed to make. When an individual effects so much good, it seems to be often thought that he accomplishes it by virtue of some charm or magic, or preternatural influence, of which the rest of the world cannot partake. The superintendent of the Rauhe Haus is a refutation of this idea. Laboriously, perseveringly, unintermittingly, he uses MEANS for the accomplishment of his desired ends. When I put to him the question, in what manner he produced these transforming effects upon his charge, his answer was, 'By active occupations, music, and Christian love.' Two or three things should be stated in explanation of this compendious reply. When a new subject comes to the Rauhe Haus, he is first received into Mr. Wichern's own family. Here, under the wise and watchful guardianship of the master, he is initiated into the new life of action, thought, and feeling, which he is expected to lead. His dispositions are watched, his character is studied; and as soon as prudence allows, he is transferred to that one of the little colonies whose house-father is best qualified to manage his peculiarities of temperament and disposition. Soon after the opening of the establishment, and the increase of its numbers, Mr. Wichern found that it would be impossible for him to bestow the requisite care and oversight upon each one of his pupils which his necessities demanded. He cast about for assistance, and though he was able to find those in the community who had enough of the spirit of benevolence and self-sacrifice to undertake the difficult labour to which his own life was devoted, yet he soon found that they had not the other requisite qualifications to make their benevolent purposes available. He could find enough of well-intentioned persons to superintend the workshops, gardens, &c., but they had not intellectual competency. So he could find schoolmasters who could give good lessons, but they were not masters of any handicraft. He was therefore driven, as he says, to the expedient of preparing a class of teachers, to become his auxiliaries in the work. For this end he has superadded to his original plan a school for the preparation of teachers; first to supply himself, then to send abroad to open other institutions similar to his own, and thirdly to become superintendents of prisons. This last object he deems very important. Questions about prison-architecture, he says, have given a new literature to the world; but as yet nothing, or but little, is done to improve the character or increase the qualifications of prison-keepers. I have often felt the force of this remark in the numerous continental prisons which I have visited. Though the masters of the prisons have generally appeared to be very respectable men, yet the assistants or deputy-turnkeys have very often seemed to belong to a low order of society, from whose manners, conversation, or treatment of the prisoners, no good influence could be expected.

This second institution of Mr. Wichern is in reality a normal school, which the necessities of his situation suggested and forced him to establish.

During the ten years of the existence of this institution, there have been 132 children received into it. Of these about 80 were there on the

1st of July 1843. Only two had run away, who had not either voluntarily returned, or, being brought back, had not voluntarily remained. The two unreclaimed fugitives committed offences, fell into the hands of the civil magistrate, and were imprisoned.

Who can reflect upon this history, where we see a self-sacrificing man, by the aids of wisdom and Christian love, exorcising as it were the evil spirits from more than a hundred of the worst children whom a corrupted state of society has engendered; who can see this without being reminded of some case, perhaps within his own personal knowledge, where a passionate, ignorant, and perverse teacher, who, for the sake of saving a few dollars of money, or from some other low motive, has been put in possession of an equal number of fine-spirited children, and has, even in a shorter space of time, put an evil spirit into the bosom of them all? When visiting this institution, I was reminded of an answer given to me by the head master of a school of a thousand children in London. I enquired of him what moral education or training he gave to his scholars--what he did, for instance, when he detected a child in a lie? His answer was literally this—'I consider,' said he, 'all moral education to be a humbug. Nature teaches children to lie. If one of my boys lies, I set him to write some such copy as this—"Lying is a base and infamous offence." I make him write a quire of paper over with this copy; and he knows very well that if he does not bring it to me in a good condition, he will get a flogging.' On hearing this reply, I felt as if the number of things in the condition of London society, which needed explanation, was considerably reduced.

What is most remarkable in reference to the class of institutions now under consideration, is the high character of the men—for capacity, for attainments, for social rank—who preside over them. At the head of a private orphan house in Potsdam is the venerable Von Turk. According to the laws of his country Von Turk is a nobleman. His talents and acquisitions were such that at a very early age he was elevated to the bench. This was probably an office for life, and was attended with honours and emoluments. He officiated as judge for fourteen years; but in the course of this time, so many criminal cases were brought before him for adjudication, whose only cause and origin were so plainly referable to early neglect in the culprit's education, that the noble heart of the judge could no longer bear to pronounce sentence of condemnation against the prisoners; for he looked upon them as men who, almost without a paradox, might be called guiltless offenders. While holding the office of judge he was appointed school inspector. The paramount importance of the latter office grew upon his mind as he executed its duties, until at last he came to the full conception of the grand and sacred truth—how much more intrinsically honourable is the vocation of the teacher, who saves from crime and from wrong, than the magistrate who waits till they are committed, and then avenges them! He immediately resigned his office of judge, with its life-tenure and its salary; travelled to Switzerland, where he placed himself under the care of Pestalozzi; and, after availing himself for three years of the instructions of that celebrated teacher, he returned to take charge of an orphan asylum. Since that time he has devoted his whole life to the care of the neglected and destitute. He lives in as plain and inexpensive a style as our well-off farmers and mechanics, and devotes his income to the welfare of the needy. I was told by his personal friends that he not only

deprived himself of the luxuries of life, but submitted to many privations in order to appropriate his small income to others whom he considered more needy; and that his wife and family cordially and cheerfully shared such privations with him for the same object. To what extent would our own community sympathise with, or appreciate the act, if one of the judges of our higher courts, or any other official dignitary, should resign an office of honour and of profit to become the instructor of children!

Even now, when the once active and vigorous frame of this patriarchal man is bending beneath the weight of years, he employs himself in teaching agriculture, together with the branches commonly taught in the Prussian schools, to a class of orphan boys. What warrior, who rests at last from the labours of the tented field after a life of victories; what statesman, whose name is familiar in all the courts of the civilised world; what orator, who attracts towards himself tides of men wherever he may move in his splendid course; what one of all these would not, at the sunset of life, exchange his fame and his clustering honours for that precious and abounding treasury of holy and beneficent deeds, the remembrance of which this good old man is about to carry into another world. Do we not need a new spirit in our community, and especially in our schools, which shall display only objects of virtuous ambition before the eyes of our emulous youth; and teach them that no height of official station, no splendour of professional renown, can equal in the eye of Heaven, and of all good men, the true glory of a life consecrated to the welfare of mankind!"

SECTION VIII.

A HUNDRED years ago, nay, within thirty years, the working classes were certainly better paid than they are now throughout the country, and particularly the unmarried agricultural laborers were doubly blessed in comparison; they associated, and lived at the same table with their employers; consequently were better off as regards food, and intellectual and moral association than they are now. Farmers in England, and Scotland, are now, generally better educated, and refined in their manners, and habits, than they were thirty or forty years ago; and the laborers are less so, consequently they are set apart, and thrown upon their own moral standard, and association with little time and less example to improve their intellectual, or moral condition. Since capitalists, and intelligent independent people, can only obtain their profits and luxuries through the operative classes, it behoves them to consider seriously their best interest, and the duty of the property they represent, towards those classes, from whom they are removed in the scale of civilization, though equally subservient, and essential to the well being of one another. The interest of mankind is indissolubly connected, so that one part cannot be oppressed, or injured without the other, sooner or later, by reflection. Thus if the representatives of property allow the poor to continue in total ignorance of their relative position, and duties to themselves, and neighbours, and pay them the least possible

pittance for their services, or support them in an union, to gnaw putrid bones; they must expect to have their property burnt, plundered, and severely taxed to preserve order. It is inexcusable for such a state of things to continue, since various plans have been suggested to government, and one amongst others is,—Labor in communities; lately strongly and feasibly recommended by Mr. J. Minter Morgan, on "Institutions for ameliorating the condition of the people," he appears to have succeeded in proving that labor in communities, is more easy, certain, and profitable, than individual labor. Mr. M. contends that three hundred families associated into one village, laboring for the common good, participating in the common profits, and subject to definite regulations, would be, in every respect, better provided for, than under the system now prevailing. We think that the individual or selfish principle has existed long enough, and we think, in regard to the community at large, has failed. Selfishness has hitherto been the root of all our social evils, and any scheme which proposes its diminution is one at least of wholesome intention, therefore, it might be well to see, whether a desire for the general good may not also be made to have some influence on human conduct, when associated with the advantages of the individuals.

In the new world though this principle has now and then failed, it has often succeeded, indeed, some of the most prosperous communities on the face of the earth, are now to be found in the Transatlantic forest, consisting, in may cases, of persons who had done little for themselves or society whilst isolated and exercising individual callings. The duty of the representatives of property and their true economy is by every possible means to infuse knowledge and habits of comfort, and even luxuries amongst the operative classes, in order that they may have the self-respect and pride to hold themselves in the respectable position in which they were fostered, or to improve it, and ever regard sinking in the social scale with horror. Whatever degrades the people in their condition, or even that which does not tend to elevate them, it must be a national charge to prevent: hence they must not be allowed to live in unwholesome or inconvenient dwellings, or habituated to an inferior mode of living, every exertion should be made in the opposite direction to keep up wages by all legitimate means, and improve the position of the laborers by increasing the means of employment, comforts, and even luxuries. These are the true principles of safety to all, whilst everything tending downward in the social scale, produces a still further decline, and the operation of the counteracting feelings; dislike to abandon comforts long enjoyed, and the dread which a laborer may have to lower himself in the eyes of the little world around him, is constantly diminishing. Now let us ask do we provide and take care of our poor at the unions, upon the christian principle of "do unto others as we would they should do unto us?" we certainly do not. Unions of parishes were suggested by the landed aristocracy with a view to lessen the poor-rates upon their tenants in order that their rents might be kept up: the plan

has signally failed in the desired object. By the late census, it has been established, that not more than one-eighth of the population of Great Britain is engaged in agriculture; and the demand for agricultural laborers does not increase, but rather diminish from year to year, in spite of all the protection vouchsafed to them. The population is rapidly multiplying, therefore if it were to depend solely on agriculture, the whole of the surplus population must go to the workhouse, or be miserably poor, as a large proportion of the Irish are, in consequence of depending solely upon agricultural pursuits, for want of confidence in capitalists to invest and employ money in building and working manufactories in a country, otherwise well calculated in every sense to yield ample return, and give occupation to some thousands, together with contentment, habits of industry, and self-dependence. This would effectually ward off their frequent threatened famine, diminish their demand upon this country, and save them from becoming dupes of some arch-beggar and impostor, with numerous cormorant-like satellites, who for the sake of an income, wrung from the vitals of the deluded people, deceive them with false promises of impossibilities. Thus the mental faculties of the people are hooded. They otherwise would direct their minds to the true principles of emancipating themselves by the only alternative of cultivating commercial pursuits. The principle of free trade will always provide employment for any increase of population: the most insignificant order for manufactured goods from abroad, would obviously improve the state of labor, by giving work to some who have nothing to do. Multiply these orders, and you of necessity diminish the number of the unemployed, until, as you proceed, you absorb all the existing hands, and make room for more free-trade, and enlarge the field of our foreign trade, without contracting the amount of agricultural labor; on the contrary, as it has been a thousand times proved, the growth of the manufacturing system would necessarily give fresh expansion to the agricultural system. The spirit of the age seems to demand an universal intercourse, personal and commercial; for in proportion as nations associate together and amalgamate their interests, will the moral and social habits of the people progress into every nook and corner of the world, ever turning all those uncivilized vicious habits, and restrictive laws, which tend to keep nations asunder, and compel their people to live, however inconveniently, upon their respective produce, instead of on the reciprocal interchange of their relative advantages for producing certain productions; thus the general agency of commerce is subservient to the beneficent design of God, who has willed that the greatest utility should be perfected by the aggregate combinations of many alien elements!

These views, from party feelings and interest, have been stoutly opposed, but they are gaining ground, even amongst their opponents. Circumstances have, undoubtedly, of late tended to soften the heart, to render men more compassionate, to interest them in the condition of their neighbours, and to enlist them in the service of the poor. It is desirable, therefore, to remember that we are encompassed

by a circle of awful duties, for the non-performance of which we shall all of us answer before God. Among these duties there is but one more pressing, but one more sacred than our duty towards the poor; and yet not one so frequently, so habitually neglected. Perhaps no man does all the good he can, or is half as charitable as he might be. I do not mean the charity of many habitual donors of a little money to the begging stranger; such gifts are the mechanical or idle habits of persons who delude themselves with the fancy, that they fulfil the duties of christians and remove divine retribution, and receive ten-fold blessings. The proper duties of a christian is to seek proper objects of charity, and upon principle relieve, or report them to proper authorities, nationally appointed; otherwise, the well-intentioned aid may be given to support the idle and profligate. But what is commonly understood by charity, is by no means enough to satisfy the conscience of any one who considers that, in whatever direction we move, there is misery on all sides of us—misery which does not thrust its face in at our doors and windows, to scare us from our enjoyments, innocent or otherwise, but shrinks back into obscurity, and hides itself, and perishes too frequently unseen. It is undoubtedly our duty, either personally or by proper and efficiently paid officers, appointed to superintend the locality by the parish, county, or the nation, to make inquisition into these matters. To suppose that the beggars who throng the streets, are the only persons, (and generally they are not) in this country, who want a morsel of bread, is very erroneous: they who beg, seldom want, for it is a trade, disgracefully allowed, and often made by injudicious donations, a lucrative one. It is a custom with many to give a certain mite, to relieve their conscience whenever they go out, to the first street beggar they meet; such persons are not worthy of the name of charitable christians, but rather idle encouragers of vice: some give judiciously, some to all, and some give nothing at all. What we want is that active charity, equally to rest on the shoulders of all according to their means, to exert itself to prevent distress and disease, and take precaution, exercise prudence, and act for those who cannot act for themselves; in short, we want legislative charity to prevent those sources of evils, which we have endeavoured to point out, those which more severely press upon tradesmen, and the poor.

The following terse observations appeared in the *Times*. "Up to the present day, parliament has never entered, wisely, and considerately, upon the question of the condition of the poor. It has passed acts in haste, apparently with a view of getting rid of the subject, instead of which, by that very haste, bringing back the subject before them again. That which is ill done, must of necessity be reconsidered and improved; and that which is done hastily must, of necessity be ill done. For this reason the poor are ever before parliament, the bare mention of them exciting a powerful feeling of irritation. It reminds honorable members of duties unfulfilled, it may be, of positive acts of injustice and cruelty. Our legislature has not yet come to the conclusion, that in order finally to settle the question of the poor, it must consider it in a

philosophical spirit, and leisurely see that charity presides over the execution of its will. Till this shall be done, a large portion of every session of parliament must be devoted to the subject, and devoted uselessly, because it is not one of those things which can be accomplished bit by bit, but must be contemplated as a whole at once, and disposed of by one great effort suggested by two or three members, and sanctioned by the whole, because a body of men will now and then make laws, *that one or two* would be ashamed to suggest. This is a subject which brooks of no delay; for while we discuss and deliberate, our fellow-creatures are starving. It is the duty of every political writer, therefore, to exert all his influence on public opinion, in order to force upon parliament the reform of the laws regulating the condition of the poor. There is no subject half so momentous as this. The external relations of empire, may be invested with more grandeur—the condition of kings and emperors, may be surrounded with greater pomp—the interest of the privileged orders, may externally seem to be of superior magnitude; but in the eye of reason, they all sink into utter insignificance, when compared with the happiness of the poor. For upon what is all political power based? Is it not upon the industry of the poor? Is it not they who supply the materials of war, and commerce, and luxury, who clothe princes with their purple—who form all the splendors of nobility, who compel to issue from the earth, all the materials upon which the lives of the whole community are sustained? Why, then, at certain stages of society, are the industrious classes regarded with contempt. And what is the catastrophe towards which that contempt must inevitably hurry those who entertain it? We entreat the country calmly to consider these things. A curse always clings to those who oppress the poor—nay, oppression is its own curse. On the one hand, it hardens, and debases those who practise it; and on the other, puts a scourge into the hands of those who endure its inflictions. How, in the fulness of time, the scourge is applied, we may learn from the events of the French revolution. That was nothing but a reaction. It was not a wanton rising of the lower orders against their superiors.

"It was the rising of the worm against the feet that had trodden it to the earth; and the strength that came to the people was the strength that is ministered by despair. How they avenged themselves all the world knows; why they did so the few only can explain. But the retribution was just; the cup of French iniquity had been filled to the brim, and would hold no more, and it was full time that they who filled should drink it. Let us profit by the example of France. As we fall as yet far short of her wickedness, let us pause while there is time, and do justice to the poor, whose state is every day becoming more and more deplorable—who perish quietly by their firesides sometimes without a murmur, though from time to time the extinction of life in them is accompanied by terrible circumstances. Of these things parliament is not ignorant. Innumerable details collected from all corners of the empire, are arranged and

piled up for its inspection in heaps, which, however, appear rather to benumb its powers than to awaken its sympathies. The effect is perfectly natural. Familiarity with suffering begets in most persons hardness of heart, as familiarity with crime too often engenders villany. Yet there are good men in both houses of parliament, men who really care for the poor, who strive still more strenuously to improve it, with these we humbly desire to co-operate to overthrow the Poor Law Commissioners, and amend the laws. Let our readers consider the following case, laid before the House of Commons by Mr. Wakley, on Wednesday evening the 5th of February 1845. It is unfortunately by no means an isolated case, but one of the heart-rending cases almost daily recorded in the public papers.

"A labouring man, of good character, only twenty-six years of age, was in a state of extreme destitution. He lived in the parish of Ruislip. I understand that six weeks before he died he had been living at Iver, in Buckinghamshire. His wife was ill, and a small expense was incurred in their maintenance during about three weeks, and they were threatened to be passed home as paupers. To avoid this, the husband borrowed a horse and cart, and removed his wife to the old workhouse. I saw the furniture in the room they had taken—it was not worth 2s.; it was a scene of miserable destitution. The parochial authorities of Iver carted them from the place to the village of Ruislip, saying at the workhouse, 'here are the parties; I have carted them home to you!' They were then allowed to go to their lodgings. The poor man being ill and out of work, said at last to his wife, 'You must go to the relieving officer and ask for relief; I must have relief, or I shall die!' See what transpired in consequence of the size of your unions. That woman, starved into a state of the most extreme feebleness, left her home and her husband, without a farthing, and with no food, to go to the relieving officer at Hillingdon, five miles from her cottage, in the depth of winter. She described the state of her destitution, and the condition of her husband. What was the overseer's answer?—and he told me afterwards he had acted in conformity with the law. 'Go to the doctor, and if he gives you an order for relief you shall have it.' The poor woman walked from Hillingdon to Uxbridge, to see Mr. Rayner, the doctor. He promised to go to her cottage, and between twelve and one o' clock she returned home without any hope, and with neither money nor food. In a few minutes after, in walked the medical gentleman. His observation was, 'You are starving, you are in want of the necessaries of life.' He gave an order, 'They are in want of necessaries.' What is she to do? she has already walked eleven miles, she has to go back five miles to the relieving officer again, and then what does she receive? Money was not given to her. She had not the opportunity of purchasing what she wanted, but she had an order given to her for three shillings, which she was to serve on a grocer of Ruislip. Now, observe—she has walked twenty-one miles in the depth of winter, with her husband, she feared, dying at home, she herself being in a state of suffering and disease, before she has received the value of three shillings. I do not know what word to use to express my feelings; but that is what we have the folly, or the weakness, or the cruelty, to call furnishing relief to the destitute poor in our process of legislation. Is this state of things to continue? That poor man in the

state he was in, with his constitution broken, merely bruised a corn on one of his toes, and lock-jaw came on, of which he died!"

The Times drew public attention to the system of administering the poor laws, and made the following observations. "If such be the fruit of our civilization, we have little reason to be proud of it. It were far better to be less refined and more humane—to bestow less attention on the Corinthian capitals of society, and more on the humble basement. Otherwise, neglecting the foundation upon which our whole system rests, we shall by and by bring down the fabric about our ears, and excite small pity from the rest of mankind. Whatever calamities may arise to us out of this state of things they will be of our own making, and we shall have none to blame for them but ourselves."

Everything connected with the administration of the charge of the poor is radically bad, and much needs reform altogether; the rate levied for their support falls most unequally upon the payers in different parishes, varying from two-pence on every pound rental, to some shillings, this is not judicious or right, the tax ought to be equally levied upon property and income, and paid for the support of the poor out of the general fund, as men are in the public service, according to a certain scale guided by certain circumstances.

The onerous mode in which our Poor Law Commissioners administer the law, reminds us of a German proverb, "The places are Gods: the holders devils." The unfortunate inmates of an union are allowed much less food, and poorer in quality than is allowed at every prison in the country, nay our prisoners are better and more liberally dieted than even our *brave defenders*, the private soldiers and sailors. Surely the diet allowance for the inmates of unions must have been conceived and agreed upon after the Commissioners had sumptuously gorged their dinner.

The late disastrous exposure at the Andover Union, will it is presumed alter their management hereafter for the better, thanks to that Leviathan of combined talent and power engaged on the *Times*. We cannot resist the pleasure of transcribing its leading article for 27th September, 1845, which goes to prove that the poor are driven by the neglect of legislative care into the unions, there to be starved, and ill-treated, without a helping hand in the world. Must we conclude that on every hand the poor are poorly treated by those to whom much has been given in trust for them. The Times writes thus—

"Having already traced that degraded condition of our fellow-creatures in union workhouses which has been developed at Andover in bone-gnawing and carrion-eating to the "principle" of the New Poor Law, as distinctly laid down in the report of that Commission which bore the signatures of C. J. London at the head of the reporters, and Edwin Chadwick at the tail, we proceed to supply our readers with some further data for testing the principles thus authoritatively expounded. We do this under a conviction, that if a searching investigation were instituted, there would be found but few union workhouses where similar

abominations are not constantly practised. In fact, the delinquency being strictly referrible to the *principle* so elaborately set forth under the authority of the Bishops of LONDON and CHESTER, it would be absurd to suppose that any of the results were confined to particular unions in which they may by chance be discovered to be raging. An unusually sordid board of guardians, an unfeeling or a rapacious chairman, or a pinching, embezzling governor, may impart unusual activity to the venomous principle, as dung-heaps accelerate the hatching of vipers; but it is in the elementary principle itself we must seek the venom, and not in the incubating agency.

"It cannot be too often repeated, "line upon line, precept upon precept, "that the vital principle of the Reform Poor Law was, to reduce the condition of those whose necessities oblige them to apply for relief below that of the laborer of the *lowest class*. This, the right reverend and other authorities say, "is the *standard* to which reference must be made;" in fixing the condition of those who require relief, the object is "the *restoration* of the pauper to a position *below* that of the independent laborer." Here is the one predominating principle which, diluted on the water-gruel system, pervades every report, order, and regulation of the Poor Law Commissioners. Occasionally it escapes the mere paraphrastic slip-slop of the secretaries, and appears in all the terse condensation of the original authority, as in the following example from Mr. TUFNELL, in a confidential communication to his immediate official superiors, the Poor Law Commissioners:—

"The great secret of the Poor Law reform, and the main object of all the machinery of guardians, workhouses, relieving officers, &c., is to place the pauper in a worse condition than the independent laborer."

"Here is the "*great secret*" officially recognised in the course of a *confidential* communication between the hired executioners of the system! The necessitous are to be placed "in a *worse* condition than the independent laborer." What, then, is the real condition of this regulation standard, this elevated example of humanity, below which all who require relief are to be reduced? What are his means of obtaining a due measure of the necessaries of life? To prevent all cavil on this point, we will again refer to the Poor Law Commissioners themselves for a description of that condition which the authorities of Somerset-house set up as a standard. In attempting to reply to the complaints against their dietary, they state in one of their reports, that 21 ounces of food daily, "is more than the hardworking laborer with a family could accomplish for himself by his own exertions." Here is their official index to the "*standard*" for practically carrying out the "*principle*" of the New Poor Law! All who require relief are to be placed "in a *worse* condition than the laborer," and the "hardworking laborer with a family" cannot, they say, procure 21 ounces of food a day by his own exertions.

"This being the Commissioners' reading of their own "standard," it may be considered superfluous to refer to any other authority; but, as the Royal Agricultural Society of England have clubbed their general information on this subject, in a compilation from a selection of essays submitted to them, we are bound to refer to such witnesses, who give the most precise information on the actual condition of the *independent laborer*, with minute instructions for his general guidance, and the economical expenditure of his income. "He should," they say, "toil early

and late" to make himself "perfect" in his calling. "He should *pinch and screw* the family, even in the *commonest necessaries*," until he gets "a week's wages to the fore." He should drink, in his work, "water mixed with some powdered ginger," which warms the stomach and is "extremely cheap." He should remember that "from three to four pounds of potatoes are equal in point of nourishment to a pound of the best wheaten bread, besides having the great advantage of better *filling* the stomach." He is told, on the authority of the Council of the Royal Agricultural Society of England, that "a lot of bones may always be got from the butcher for 2d., and they are never scraped so clean as not to have some scraps of meat adhering to them." He is instructed to boil these twopenny worth of bones, for the first day's family dinner, until the liquor "tastes *something like* strong broth." For the *second* day, the bones are to be again boiled in the same manner, but for a *longer* time." "Nor is this all," they say, "for the bones, if again boiled for a *still longer* time, will *once more* yield a nourishing broth, which may be made into pea-soup.

'Here we have the condition and prospects of the independent laborer set forth with philosophical composure. To "toil early and late" to "pinch and screw the family even in the commonest necessaries;" to select the food which has the advantage of *filling* the stomach; to make three family dinners on two-penny worth of bones thrice boiled; and after all this "toiling early and late," this "pinching and screwing the family even in their *commonest necessaries*," this stomach-distending and bone-boiling, 21 ounces of food a-day is pronounced to be a more ample allowance than a hardworking man can provide for himself by his own exertions. Here is the Commissioners' "standard, to which," they say, "reference must be made" in fixing the condition of those unfortunate persons who require relief. We earnestly implore our readers not to turn away in disgust from this official description, but to master all its humiliating details, and to remember that "the great secret of Poor Law Reform, and the main object of all the machinery of guardians, workhouses, relieving officers, &c., is to place the pauper in a worse condition than the independent laborer."

Now, let our readers patiently and honestly endeavour to carry the avowed principle into practical operation on the foregoing data. Let them take an "*independent laborer*" who fulfils all the conditions of those authorities,—one who "toils early and late," "pinches and screws the family," lives on 21 ounces of food a-day, duly distending his stomach with the product of bones thrice boiled, in strict accordance with the directions published by the Royal Agricultural Society of England. Let them consider this "independent laborer" reduced, by any of the casualties to which his condition is so liable, to the necessity of requiring relief; and further consider all the machinery of Poor Law Commissioners, Assistant-Commissioners, chairmen, guardians, workhouses, relieving-officers, &c., employed in effecting that which is avowed to be their "main object," placing this man, now deemed a pauper, in a "worse condition" than that of the "independent laborer." Can our readers conceive any possible mode of realizing this "great secret of Poor Law Reform," which would not entail, as a highly probable, if not a necessary consequence, such abominations as those which have so degraded human nature at Andover? We believe it impossible by any fair process of reasoning to arrive at any other conclusion.

There may be union workhouses, and we believe there are, where

such abominations are not committed, but in such cases the "main object" of the system, as enforced by the Rev. C. DODSON and his associates, has not been carried out; such exceptions do not, therefore, affect the principle. We take the whole disgusting details of the Andover atrocities to be irrefragibly brought home to the system; and that the authorities deem it to be so, is evident from the contrivances resorted to, throughout the enquiry, to perplex the proceedings, and to shuffle off attention from the main point,—the practical operation of working out the "great secret of Poor Law Reform." It is not to the PARKERS, the M'DOUGALS, and the DODSONS that men should look for the murderous results of this system, nor even to the Poor Law Commissioners exclusively, but to their administrative chief, HER MAJESTY'S Secretary of State for the Home Department, and his official colleagues. These are the parties who should really be held responsible for this impious desecration of GOD'S image, and for all the disgraceful trickery resorted to for rendering this Andover enquiry a mockery and a fraud.

"We are well aware that any appeal *exclusively* made to the feelings of such persons, while in the exercise of power, or to their sense of justice, would be obviously out of place; but as most men are, more or less, under the influence of mixed motives, such considerations may be included in an appeal, if not to their sense of public duty, at least to their own interests and the interests of their class, estimated on a comprehensive scale—to their own security of their interest which they have in the security of their immediate descendants, and that which they may be presumed to have in their country and remote posterity. To all these we would appeal. We would appeal to their own sense of injuries received—to their own indignation at justice denied and wrongs persisted in—to their own conviction that forbearance under accumulated and still accumulating injuries must, in the natural order of things, have its limits; and that, sooner or later, the interests, the security, perhaps the very existence, of any class persisting in the infliction of such injuries must be placed in perilous jeopardy, by an instinctive perception in the classes injured, that the penalty of even unsuccessful resistance would be less intolerable than the torture of prolonged endurance. We would strengthen this appeal by an opposite consideration—by reminding these authorities, and their indiscriminate supporters, that in cases of defeat, either of parties or of classes, or of individuals, honesty and justice secure the best retreat, and afford the most honorable consolation."

Our legislators have hitherto regarded the poor as isolated, and unconnected with the superior ranks, and regard their vices and their supposed ingratitude, obstinate ignorance, and want of providence as something peculiar, inherently morbid, and distinct in the social scale; consequently, they have made hundreds of laws, laws to meet their social maladies, all, however, have signally failed to remedy the mighty evil; and so must others based upon the erroneous and selfish principles of withholding from the poor the pabulum of social virtues, education, and moral example, and such alone restrain temptations to evil ways,—means which alone have rendered the higher more civilized than the lower classes.

The profound connection between all the parts of the social body must be the ground-work of laws to be efficiently and equitably ad-

m'nistered for the advantage of the community, economically to the rate-payer, and advantageous to the receiver, by supplying the latter with means to employ his physical powers to earn his livelihood.

John Bowden said "That the object of political society is the greatest good of every citizen." We should act upon this principle, and be prompt to help each other, and humanity at large. The state should make laws and appoint public officers in parishes or districts, whose duty should always be to report to the committee superintending the sanatory condition of national schools in their respective districts, the state of each house, &c., which must be registered as a fit and proper dwelling for a given specified number of the working classes with their families, according to its size and conveniences.

The legislature might advantageously enact a law to guide surveyors and builders in the construction of all residences, and cause every builder or proprietor, to give notice of his intention to build one or more houses in certain sites to the inspecting officer of the district. Such officer should report to the sanatory committee of the capability of the place for ventilation, drainage, and good light, good water, and sewerage; the latter he must inspect during formation, as well as the materials for building; each house to be six or twelve months, according to its size and season of building, before it can be registered as fit and proper for occupation. No house either new or old, should be occupied by either new or old tenants, without being registered at a public office in the district, and the inmate having his certificate, which must be renewed free of cost, every two or three years at the sanatory office, after an inspection by the proper officer. The certificate is to testify that the house and each room thereof, is dry and well-ventilated, in good sound repair, &c. water-closets, and sewers perfect. If any deficiency in either of these matters shall be found at any time, notice must immediately be served upon the occupier, in order that it may forthwith be corrected by him or the landlord, and in default within a reasonable time, the surveyor shall be empowered to give orders to rectify the default, and recover from the owner of such dwelling by receiving the rent, or by summary legal proceedings. The Sanatory Committee shall also have power to prohibit undue crowding in the dwellings of the poor, and regulate the number and decent separation of the single of both sexes in their sleeping apartments, particularly in the public lodging-houses

The said committee shall, either personally or through the aid of their officers, be made cognizable for every person out of employment in their district, and be empowered to compel all persons out of work, or who cannot give a reasonable account of the means of supporting themselves, to work as the committee may direct. The Sanatory Committee as part of their duty, should ascertain that each indigent child in their district is receiving daily instruction at the national school (always Sunday excepted) from 9 o'clock in the morning until 4 in the afternoon, from five years old until fourteen

years old, or until such time as they may be able to pass their examination and receive their certificate as possessing the national standard of education as already suggested, and afterwards as far as possible to remain for four or five years under the surveillance of the committee, in order that they may not be ill-used by their employers, or allowed to leave them without the sanction of the committee, or to throw themselves out of employment into temptation of iniquity; in the same manner as the children of the middle classes are protected by their parents or guardians during and after their apprenticeship. In our opinion children should not be sent to school before they are five years old, even on a Sunday, in order that their physical frames may not be injured or stunted through want of the customary gambols in the open air. The first five years, at least, of their life should be devoted to parental instruction of obedience, and be imbued with love for their parents.

We suggest that since the educational course is nationally founded and supported by all religious sects, that the simple and fundamental principles of christianity be taught without the detail of any particular tenet: only that which no sincere christian can deny, appertaining to the only true means of securing present happiness, and future salvation. Therefore no parents or guardians of a child should be allowed to neglect educating him upon the plea of religious differences at the national school, if he is unable to pay for private education. Surely all may thus join in spirit with the poet:

> "The church triumphant, and the church below,
> In songs of praise their present union show.
> *Their* joys are full; *our* expectation long;
> In life we differ, but we join in song,
> Angels and we, assisted by this art,
> May sing together, though we dwell apart."

The rich and the poor must annually produce a certificate from the teachers of their children, of the number of days their children attended school for the last year, and deposite it with the commissioner's clerk to be registered. The final examination of children privately educated, should be more comprehensive and stringent, according to their rank and means, than that adopted for nationally educated children.

We regard the probable objections that may be urged against these suggestions, the contraction of the rights and liberties of the subject, to be perfectly unreasonable, for they are already only nominal, and lead to no good purpose. In reference to the advantages of liberally educating the poor, in opposition to cavillers against the practice, lest it should make them discontented with their allotted social station, I beg that such dainty people may take an opportunity to visit St. Mark's College in Stanley Grove, Chelsea, an institution successfully carried out by the National Society, for training masters; there they will hear the inmates perform delightfully the choral service of the church from the finest old masters: and

afterwards let them take an opportunity to converse with any one of the inmates, when they will surely be convinced of the fallacy of their objections, and the truth "That the soul should be without knowledge is not good;" and there also, see how consistently, with habits, diet, and dress of the utmost simplicity, the poor and low-born may be raised and softened to true gentility of spirit, and have their sense of the good and beautiful opened, and their love for them enlarged with amiable simplicity.

No man has a right to live in idleness, and become a burden upon the industrious, the frugal, and the capitalist, or live by robbing his neighbours, or by poaching upon their property, smuggling, or otherwise upon wages of vice, to become sooner or later an expense to the country, by imprisonment, and to his parish, in supporting his wife and family. Hence, the justification of the state to become the guardians of the children of the improvident parents, and to watch and direct the latter for religion's sake, and the economy and safety of the whole community.

Thus the moral atmosphere of the country would be greatly improved in a few years, and totally changed in thirty, without incurring a greater expense, if not gaining upon the consequences of the present lax mode and mismanagement of the people.

To carry out the general educational plan, we cannot see any obstacles that an Act of Parliament may not readily and justly remove, and with respect to finding occupation for the working classes, there do not appear to us any insurmountable difficulties if the state would but determine to advance capital and seek means to use it, as for instance to drain bogs in our own country and Ireland. Indeed, the inevitable consequence of instilling into the rising generations scientific knowledge of chemistry in practical schools, is to open new roads in a thousand directions to commerce, and innumerable branches of national industry. By this rational mode of educating, and every other legitimate means, it is the duty of the nation to prepare the minds of the people for every source of remunerating occupation, and to find and offer practical advice to the people to ward off physical evils, cause of diseases, and premature death, to improve their mind, elevate their morals, refine their manners, and by reforming their whole character ensure a happy life and a blessed hope of immortality.

The physical condition of the working man must always depend more or less upon the means within his reach to earn his livelihood; therefore in justice to them the nation should remove duties upon all the necessaries of life, which will at the same time give an immense impetus to commerce, and all kinds of manufacture and general trade, and thus enable every able-bodied man to earn his livelihood, and comparative independence, giving no excuse for leading a wandering, idle, smuggling, poaching life, about the country and towns. We can only thus expect to engender kind feelings of mutual interest and forbearance between the employed and the employer, love for their country, respect for its laws, and loyalty for the sove-

reign. Rate-payers will pay all taxes cheerfully, especially the poor-rates, since they will be well assured that the receivers are only the helpless and decrepid and worthy of being made to feel—

> "Redolent of joy and youth,
> And breathe a second spring."

Not however, in a state of total uselessness, but in productive occupations, according to their capabilities, in the spirit of Goldsmith's couplet,

> "To husband out life's taper at the close,
> And keep the frame from *wasting by repose*;"

without being denied the necessaries, and even the luxuries of life, so that they may finally be

> "Gathered, not harshly plucked, for death mature."

The capitalist and every thinking man must see that the time has come when they must seek the prevention of the present rapid increase of a pauperized, unhealthy, and depraved population, by wiser methods than are now in force. Poachers are the consequences of the neglected condition of the poor, their want of education and employment, which if supplied would eradicate in a great measure their calling and its evil tendency: a much better plan than keeping many game-keepers, as lately suggested by a gentleman in Parliament, to employ the people. It is not improbable that the "two hundred game-keepers" at a Berkshire castle, cause no less than four or five hundred poor people to be supported by the country and the parishes, *i. e.*, by the committal of the poachers to prisons, and their families to the union. Another *panacea* recommended by a *philanthropic nobleman* some time ago in the House of Commons to relieve the condition of the operatives, was, that they should only work ten hours a day, for *the benevolent purpose of saving them the trouble and expense of eating four meals a day!* One member recommends landed proprietors to keep a regiment of game-keepers, and the other restricted labor, and consumption of food. Fortunately the majority of our legislators have too much talent and good sense to entertain such fallacious ideas of serving the poor.

Give the people daily employment for ten or even eight hours, and good wages, they will ask no more. We think that eight hours is as much as a man ought to be employed, mentally, or physically, for a decent subsistence, and the employer would get as much done in that time as in the usual protracted period, in consequence of the nervous and muscular energy thereby becoming exhausted. High wages are objected to by the advocates of the ten hours bill, from a supposition that they tend to dissolute habits, extravagance and demoralizing indulgences. These matters are often the result of hereditary influence, example, want of moral tuition, and convenience for wholesome recreations, manly games in the open air, and mental recreation &c.

Mr. Lyell in his travels in America, observes that working men and women pay for attending lectures on scientific subjects after their day's labor, he writes thus—"It reflects no small credit on the national system of education, that crowds of the laboring classes of both sexes, should seek recreation after the toils of the day in listening to discourses of this kind."

Doubtless our working people would do the same, had they the opportunity at a small expense of so interestingly and beneficially parting with their money. We know that clerks and shopmen do so, whenever they can, and would still more frequently were their hours of business contracted as in government offices. The poor man's excess of drinking may thus be cured, but certainly not by reducing his means, or if so the same rule should be applied in reducing the means of those men of large fortune who in immoral and *ruinous* dissipation of every kind, waste *their* property. The work-people on whom the country's welfare depends, have no property but that consisting in the return made to them for their labor, bestowed on the property of others. They claim as a tax on property that they should have their just hire, and be placed in the position in which they can exercise their skill, and by industry hold that position in which they can obtain the common decent privileges of civilized existence, they ask no more; neglect this, and, sacred as now are held the rights of property, a time will come when the prayers of the wildest democrat that ever lived shall be more than granted.

In Mr. Mackinnon's History of Civilization we have very ably traced the rise, progress, and power of public opinion in changing and modifying political institutions. Mr. M. remarks very justly, that in proportion as public opinion advances in strength and judgment, liberty and the welfare of the people is increased, and that

"The efficacy of this national sentiment depends in great measure on the relative proportion of those persons not forced to labor, with the number who are compelled to gain their daily bread by daily work. The community is separated into three classes, the upper, the middle, and the lower; but the middle is deemed the most important, the upper not being sufficiently numerous, and the lower not sufficiently informed, nor possessed of the leisure necessary to give weight to public opinion."

Mr. Mackinnon thinks "that the form of government and its liberal tendency depends on the state of society, not the state of society on the form of government."

It is reasonable to allow that the public opinion is virtually in the middle classes of society, the direct bond between the higher and the lower classes; for the latter are protected, guided, and directed by the middle classes, and indeed the wealth of the aristocracy compared with that possessed by the middle classes is as insignificant as the number of the former is in comparison with that of the latter: this fact, together with their sound learning, practical intelligence, and activity, have in a political sense forced and elevated them into high offices; and compressed and contracted the political sway of the

higher classes into a more legitimate and convenient form for the present age, namely, individual merit.

The neglected mental culture of the lower classes, and their continued occupation renders them improvident, extravagant, or careless, in laying out their scanty earnings economically for the most nutricious food. To them it is of the utmost importance to be acquainted with the relative constituents of nutriment in different kinds of ordinary food, particularly since what they purchase is always in small quantities, consequently dearer and often inferior to that purchased by the rich; however great their loss is from this cause, it is nearly equalled by ignorance of the physiology of digestion and the constituents of food for creating power and warmth of body. This kind of knowledge to the aristocracy is comparatively of little importance, and therefore totally neglected, if we may judge by the famous curry receipt of the Duke of Norfolk. A vast amount of misery amongst the poor may be avoided by selecting food with due knowledge of proportions of the nutricious constituents; and all the knowledge necessary can be easily acquired.

We shall suppose a man has a wife and three children, earning only ten shillings a week, a sum that Judge Hale, about 150 years ago, said, after paying much attention to the subject, was as little as a poor family could live upon at the prices things even then were. It is too true the poor man is not better paid now with the necessaries of life and comfort much dearer. The wife, if she keep the house and the children clean, make, mend, and wash the husband's and childrens' clothes, and dress their food, &c., will not, or ought not to have any time to add any thing to the earnings of the husband.

Whether ten shillings a week will furnish lodgings and a proper quantity of meat, bread, vegetables, flour, milk, butter, cheese, and clothes, bedding, fuel, soap, candles, salt, pepper, &c., without curry powder at three or four shillings a pound, I leave others to conjecture; certainly economy must be rigorously observed, in a degree that cannot often be expected from the working or any other class. In short the wages are inadequate, and the poor are not furnished with the requisite quantity of the necessaries of life. Hence the children die at an early age, in consequence of their mother being partially starved, her milk becomes too scanty and poor to support them, and after the children are weaned, they often die for want of sufficient nutricious food. Medical advice cannot be commanded during the illness of either children or parents, since it cannot be paid for by them. The children are still more neglected with regard to their mental acquirements, for they receive no education or religious instruction; hence crime and destruction of property. Unfortunately even in these comparatively enlightened days, education of the working people is supposed by some, likely to prove more prejudicial to them and to the community, than advantageous, because they say the poor were intended by nature as a lower grade of human beings, as irrational animals, or mere machines, therefore

object to have their rational faculties cultivated, lest they become unsteady and dissatisfied with their position. We regard a desire in the working classes to better their condition, and a fear of sinking in the scale of society, their right as much as in any other class. If it were so it would perhaps be better that they should be brought up in ignorance, since if any degree of knowledge prevented them seeing more clearly, and feeling more acutely what they suffer, and the want of the comforts and happiness of which they are deprived. But the poor, we think, have a right, before they give up all the advantages of rational creatures, to expect a better reason for it than the mere assertion *that those things were ordained so*, or *were always so*. They have a right to expect that so great a difference in their lot and condition should not be made, unless indicated by nature and made evident by her laws; thus they are refused the faculties and powers necessary for the acquisition of knowledge and property.

Clergymen continually inculcate in their sermons and writings, contentment and submission to the dispensation of Providence: they assert that the measure of happiness is much the same in all conditions and nearly equal. To write or preach in this manner is adding insult to oppression. Can the poor be expected to make the earth yield her abundance of food and clothing, and see with indifference their offspring perishing for the want of such things as they perceive around them the effects of their labor, but which they cannot reach? Can they see without pain the luxurious abundance of the rich, and compare it with their own pinching poverty, and reasonably be expected to believe it to be the dispensation of a beneficent Creator. Such doctrine as this would suit every kind of oppression and tyranny, we believe it contrary to fact, and from considerations drawn from the constitution of the human frame.

The sensations of fatigue and hunger, miserable homes, vicious habits, and destitute condition, must deprive them of every consolation and satisfaction. Mr. Colquhoun writes "To suffer the lower orders of the people to be ill-educated, to be totally inattentive to those wise regulations of state policy which might serve to guard and improve their morals, and then to punish them for crimes which originated from bad habits, is exercised under the most despotic government." Fortunately the nation has of late commenced considering the condition of the great mass of the people; how they are fed; how they are clothed; what kind of houses they live in; how they are supplied with fuel, pure air, light, and water; how they are instructed; in short what advantages, corporeal, mental, and spiritual they enjoy or are deprived of. This is the only legitimate mode of striking at the root of the evil, and the remedial means will suggest themselves to insure a healthy and a happy condition of the great mass of the people.

SECTION IX.

A GREAT part of this section consists of select extracts in a condensed form, from the works of eminently moral and scientific men, with a hope to engage the attention of a large class of persons, who have either no opportunity or time to consult the original works of the authors upon subjects immediately interesting and appertaining to the beneficence of God and the economy of his laws, in order to favor a taste for a higher mode of amusing and interesting the minds of men engaged in business, than those to which they too often resort. Certain moral maxims have been commended during the various stages of civilization and forms of religious worship, from the earliest period, for obtaining a happy state of the mind and body. The following advice of excellent morality of the heathens is worthy of the christian observance, it was read by Sir William Jones on a wall of a Mosque in the island of Johanna on the eastern coast of Africa. "The world was given us for our own edification, not for the purpose of raising sumptuous buildings; life for the discharge of moral and religious duties, not for pleasurable indulgences; wealth to be liberally bestowed, not avariciously hoarded; and learning to produce good actions, not empty disputes."

The sciences of chemistry, physics, &c., serve man by pointing out what is advantageous and injurious to him, and how to obtain the one, and avoid the other; and above all they illustrate the wisdom, and beneficence of God, and the economy of his laws, and they teach us how to investigate the relations which connect man with his Creator. In this desired grand purpose, chemistry will admirably serve us, so ably investigated by Liebig, Vaquelin, Percy, Boussingalt, Dumas, Faraday, Daniel, Gregory, Turner, Fownes, and many other respected names.

"Morality and social habits are the result of civilization or knowledge, and then religion and unfeigned adoration of our Creator, follow the comprehension of the harmony and economy of his laws. Our blessed religion and science appeal alike to reason, and submit their credentials and court or command the most trying scrutiny for the mutual illustration of their abstruseness for our edification and benefit!"

Benson has written that "Half our pleasures, our best pleasures, the most innocent and congenial to our nature, as rational beings, are derived from acquisition of ornamental knowledge, the pursuit of entertaining science, or the practice of elegant arts. So far, therefore, as mental recreation is requisite for man, the study of such things may be justified without referring to any thing but the satisfaction of the individual himself in his vacant hours: but beyond the point of strict necessity for relaxation, this reason will never extend. There must be a higher aim, an honorable and substantial end to be gained, before any considerable employment of

the powers of the understanding in the acquisition of any lighter species of intellectual attainment can be fairly vindicated: and that vindication, the difficulties of scripture afford. For the golden chain of science is so firmly and admirably formed, that it would be impossible to take away the least link, without injuring the strength and beauty of the whole. Since, therefore, the whole body of knowledge tends, in consequence of the existence of difficulties, to the elucidation of Scripture, the cultivation even of the merely ornamental parts of learning, is requisite to the defence of revelation; and consequently, justifiable in a still larger extent than it would otherwise have been. The minutest branches of philosophy, and the most trivial recreations of the mind, thus become important in a religious point of view. We are evidently, therefore, and deeply indebted to the difficulties of Scripture, because by making every species of knowledge subservient to the illustration, and vindication of religious truth, they have dignified and sanctified, as it were, the scientific amusements of our leisure hours, and heightened the pleasure of studying the subordinate branches of literature, by teaching us that we may be usefully employed, even in our intellectual relaxation."

Hence we are greatly interested in the enquiries of men of science who have of late been most successful, particularly Liebig, whose splendid exposition of the chemical and physiological balance of organic natures, has arrested the attention of Dumas and Boussingalt, and they have observed that his chemical views of the grand features of the life of plants and animals, point out a variety of new ideas, calculated to supply general physiology, medicine, and agriculture, with grounds upon which the study of the chemical phenomona that take place in organized beings may be advantageously pursued. Vegetables and animals, that contain matter in their composition:—Whence comes it? What part does it play in their tissues, and in the fluids that bathe them? What becomes of it when death breaks the chain, by which its various parts and forms were so closely conjoined? Such are the important and truly interesting questions which Boussingalt and Dumas have undertaken to point out in their essay. It cannot fail to excite amazement, when we find that of all the elements of modern chemistry, organic nature has made use of but three or four: that of those vegetables and animal substances, which are now multiplied almost to infinity, general physiology requires no more than some ten or twelve species; and that all the phenomena of life, so complex in appearance, may be referred in the essential completeness to a single general formula, so simple that in a few words every thing seems stated: every thing having been recalled to mind, every thing foreseen. Numerous results have satisfied the authors, that an animal, in a chemical point of view constitutes a true apparatus of combustion, by which carbonaceous matters, burnt incessantly, are returned to the atmosphere in the shape of carbonic acid; in which hydrogen, burut incessantly, is returned as water: whence, in fine,

free azote is ceaselessly exhaled in the breath, and, in the state of oxide of ammonium, is thrown off in the urine. So that from the animal kingdom as a whole, carbonic acid, watery vapour, and azote or oxide of ammonium, are continually escaping—simple substances, and few in number, the formation of which is intimately connected with the history of the atmosphere itself. On the other hand, it has been found that vegetables, in their natural and healthy state, decompose carbonic acid incessantly, fixing the carbon, and setting free the oxygen; that they decompose water, seizing on its hydrogen, and disengaging its oxygen as before; lastly, that they either abstract azote directly from the air, or take it indirectly from oxide of ammonium, or nitric acid: thus acting, in every particular inversely, or in opposition to animals. So that, while the animal kingdom constitutes an immense apparatus of combustion, the vegetable kingdom constitutes, in its turn, an immense apparatus of reduction, where carbonic acid decompounded, leaves its carbon; water its hydrogen; and oxide of ammonium and nitric acid their ammonium or their azote. If animals incessantly produce carbonic acid, water, azote, and oxide of ammonium, vegetables consequently consume, without cessation, oxide of ammonium, azote, water, and carbonic acid; what the one gives to the atmosphere, that the other takes from it; so it may be said, that plants and animals are the offspring of the air; that they are but condensed or consolidated air. Vegetables and animals, therefore, come from the atmosphere, and return to it again, they are true dependents of the air. Vegetables consume from the atmosphere the elements which animals exhale into it:—viz. carbon, hydrogen, and azote, or rather carbonic acid, water, and ammonia.

The next question is, how do animals procure the elements which they give to the atmosphere? The simplicity of Nature's law is truly admirable! Animals always derive their elements primarily from vegetables. Animals do not create any of the truly organic substances; they consume or destroy them; vegetables, on the contrary, habitually create these substances—they destroy but few, and this only for particular and determinate ends. Thus it is in the vegetable kingdom, that the great laboratory of organic life is found; it is there, that both vegetable and animal substances are compounded; and they are all alike formed at the cost of the atmosphere; from vegetables these substances pass ready-formed into the bodies of herbivorous animals, which destroy one portion of them, and store up another in their tissues. From herbivorous animals they pass ready-formed to the bodies of carnivorous animals, which destroy or lay them up, according to their wants. Finally, during the life of these animals, or after their death, the organic substances in question return to the atmosphere, from whence they originally came, in proportion as they are destroyed. Thus is the mysterious circle of organic life on the surface of the globe, completed and maintained! The air contains or engenders the oxide substances required—carbonic acid, water, nitric acid, and am-

monia. Vegetables seize upon the radicals of these—carbon hydrogen, azote, ammonium; and with them they fashion all the variety of organic or organizable matters which they supply to animals. Animals, again, true apparatuses of combustion, reproduce from them—carbonic acid, water, oxide of ammonium and nitric acid, which return to the air, to reproduce the same phenomena to the end of time. An agent which acts an undoubted part in all these various phenomena, is the solar light. Without light, Nature was without life and without soul; a beneficent God, in shedding light over creation, strewed the surface of the earth with organization, with sensation, and with thought. When we reflect that light is the very life of plants, and its agency, the first condition of their existence, and the perfecting of the organization of all known animals, it must be highly interesting to consider the influence of light on animal and vegetable life, now beginning deservedly to command attention for its investigation. For instance, the fact of the decomposition of carbonic acid by leaves has, by its connection with modern chemistry and physiology, pointed out the starting point of the organization of dead matter, that with this agency a series of organic atoms begin, which becoming more and more completed as they pass through the plant, finally end in flesh, blood, and nervous matter, purely through the creative power invested in the laws of light.

It would lead us too far in our present purpose to pass in review the kindred researches of Herschel, Melloni, Talbot, Draper, Hunt, and others. Suffice it to remark that at this point physiology connects itself with the most beautiful investigation of our time,—investigations from which will date a new era in physics, and which, in the discovery in the sunbeam of agencies so widely differing in their sensible qualities, and in the nature of their effects, but yet identified by common properties of refraction and polarization, already seem to point to that great consummation, which the most eminent philosophers of modern times have ever anticipated as the ultimate and highest generalisation of science—namely, the blending all the imponderable agencies of the universe into one essence.

What sublime views here open before us! Already a beautiful truth broke upon our minds, in the discovery of Dr. Draper, that the same agent which brings in its beams the witness, at once of countless worlds at infinite distances, and of the objects immediately around us, in all the rainbow hues with which itself has decked them, should also be God's great dispenser of life, and first cause in the work of organization.

Withdraw its lovely and benignent influence, and the earth would be again without form, and void, and would float through space a lifeless corpse.

It is only when we strive, as far as our limited imagination will allow us, to contemplate this radiant and ethereal messenger, in all these its wonderful attributes, that we can rise to some vague sense of the vast moment of that mandate, which went forth at the beginning of the world, and which is announced in Holy Writ in these

words of sublime simplicity:—AND GOD SAID, LET THERE BE LIGHT: AND THERE WAS LIGHT.

And with respect to the sources whence oxide of ammonium and azotic acid, from which vegetables derive a portion of their food, are derived, these are produced upon a grand scale by the action of those magnificent electric sparks that dart from the storm-cloud, and, furrowing vast fields of air, engender in their course the nitrate of ammonia, which analysis discovers in the thunder showers. As it is from the mouths of volcanoes that the principal food of plants, carbonic acid, is incessantly poured out, so it is from the atmosphere on fire with lightnings from the bosom of the tempest, that the second and scarcely less indispensable aliment of plants, nitrate of ammonia is showered down.

Scarcely are carbonic acid and nitrate of ammonia formed when light begins to act on them for new purposes. By its agency carbonic acid yields up its carbon, water its hydrogen, nitrate of ammonia its nitrogen. When these elements combine, organic matters are formed, and the earth is clothed with verdure. It is, in fact, from absorbing the light and heat of the sun, that vegetables perform their functions; whilst animals on their part engender heat and elicit force in consuming that which vegetables have produced, and slowly accumulate. Thus we see the atmosphere presents itself including the primary materials of all organization. Volcanoes and thunder-storms meet us as the laboratories in which are compounded the carbonic acid and nitrate of ammonia which life requires for its manifestation and extension. Light comes and with the concurrence of carbonic acid and nitrate of ammonia, the vegetable world, the grand producer of organic matter is developed. Plants also absorb the solar light which enables them to decompose carbonic acid, water, and ammonia; plants are embodiments of a reducing power of greater virtue than any other that is known, for no other will decompose carbonic acid in the cold.

Next come animals, true consumers of matters, producers of heat and force, true instruments of combustion. In them it is that organized matter acquires its highest expression. In becoming the instrument of sensation and thought, organized matter is burnt, and giving out heat or electricity, constitutes our force, it is destroyed and returned to the atmosphere from which it originally came. Thus the atmosphere is the mysterious link that connects the two kingdoms (animal and vegetable) together. Vegetables absorb carbon and store up the matter which they have been able to fashion; whilst animals, through which it may be said that organic matter merely passes, burn or consume it, to produce by its means the heat and various forces which their motions turn to profit. We may compare the vegetable world of the present age, the true storehouse whence animal life is fed, to that other magazine of carbon which we possess in our primeval beds of coals, and which, burning under the genius of Papin and G. Watt, produce carbonic acid, water, heat, motion, we might almost add, life and intelligence.

The air is a mighty magazine whence plants for a long time, may

draw all the carbonic acid they require for their wants, and where animals, for a still longer period will find all the oxygen they can consume. So that the atmosphere is a mixture which incessantly renews and incessantly furnishes oxygen, nitrogen, and carbonic acid, by a thousand exchanges, of the nature of which it is now easy to form a right conception. All plants fix carbon and all obtain it from carbonic acid, obtained directly from the air by the leaves, or from the soil by the roots, through the decomposition of organic particles and manure in the soil. The carbonic acid derived by the roots from the soil passing into the trunk, and from thence into the leaves, is eventually exhaled without change into the atmosphere, if no new force intervenes. And such is the case with plants vegetating in the shade, and during the night; the carbonic acid of the soil permeates their tissues and is diffused in the air: it is incorrect to say that plants produce carbonic acid during the night; plants only then transmit unchanged the carbonic acid which their roots have pumped up from the soil. The thing is different, however, when this carbonic acid is in contact with the leaves and green parts, and the light of the sun falls on them; then the carbonic acid disappears, minute bubbles of oxygen are evolved from every point of the leaves, and the carbon is fixed in the tissues of the plant.

These green parts of vegetables are also possessed of another property, besides that of decomposing carbonic acid, viz., that of absorbing the chemical rays of the solar light. With respect to the part played by the carbon which has been fixed by plants, it combines with water or its elements, and thus gives origin to substances of the highest consequence in the economy of plants; as for instance, the cellular or the ligneous tissue of the plants or the starch and the dextrine which are their derivatives. In the same manner do plants decompose water and fix its hydrogen, in order that they may form certain compounds in which this element predominates. The hydrogenous substances thus formed are employed by plants for various subordinate purposes: volatile oils serve to defend them from insects; the fat oils serve as materials for combustion, and produce heat at the period of germination; the wax with which the leaves and fruit are covered, renders them impermeable to water, &c. Thus then so long as the plant preserves its habitual character, it derives from the sun, heat, light and chemical rays, which it stores up; it receives carbon from the air, takes hydrogen from the water, nitrogen or ammonium from ammonia or nitric acid, and various salts from the soil. With these elementary or mineral substances it fashions organic substances, which accumulate in its tissues: the substances so fashioned and accumulated are either ternary compounds, lignin, starch, gum, sugar, oils or fats; or they are quartenary compounds, fibrine, albumen, caseine, gluten.

So far the vegetable is therefore a constant producer; the animal again constitutes an instrument of combustion whence carbonic acid is incessantly disengaged, and where, consequently, carbon is incessantly consumed. At the same time that they burn car-

bon, animals also consume hydrogen: animals further constantly exhale azote: the amylaceous matters of the food of animals is changed into gum and sugar, and these substances are absorbed into the system. Fatty matters are subdivided, formed into an emulsion, and in this way pass into the vessels, to form deposits which the blood resumes for the purpose of combustion. The neutral azotized substances, fibrine, albumen, and casiene, dissolved at first and then precipitated, find their way into the chyle, in a state of minute division, or dissolved anew. Animals receive and assimilate almost unchanged, the neutral azotized substances which they find ready-formed in the vegetables, or other animals on which they feed: fatty substances they receive from the same sources, and also amylaceous or saccharine substances. These three grand orders of substances, always to be referred for their origin to the vegetables, are divided into assimilated products,—fibrine, albumen, casiene, fat, which serve for the growth or renovation of organs; and into combustible products, sugar and fat, which are burnt in respiration. Considered in this way, the animal machine seems to be the medium between the vegetable world and the atmosphere; it derives all its elements from the former, throws out all its excretions, and finally is itself decomposed into the latter.

The primitive atmosphere of our globe has formed itself into three great parts—one constituting the atmospheric air of the present times; a second represented by plants; a third by animals. Between these three masses continual exchanges are effected, but more fully explained upon Liebig's principles; matter, this great author observes, descends from the air into vegetables, penetrates in this way into animals, and returns to the air according as they apply it to their purposes. Green vegetables constitute the grand laboratory of organic chemistry: they are the agents which with carbon, hydrogen, azote, water, and oxide of ammonium, slowly form the most complex organic substances. Under the form of heat, or of chemical rays, they receive from the sun the force which enables them to accomplish this great work. Animals absorb the organic substances which plants have formed—they decompose them and bring them back towards the state of carbonic acid, water, azote, and ammonia, in which state they are restored to the air. In burning these organic substances, animals produce caloric, which radiating into space goes to supply that which vegetables had absorbed. Thus all that the atmosphere yields to plants, plants yield to animals, animals restore to the air. An eternal round in which death is quickened and life appears, but in which matter merely changes its place and form! The crude mass of the air gradually organized in vegetables, passes unchanged into animals, and becomes the instrument of sensation and of thought; then vanquished by this effort, it returns as crude matter to the source from whence it came; hence no new matter is created or can by any means be destroyed.

Now the constituents of the atmosphere are known to consist of oxygen and hydrogen, by chemical union they give rise to water, of which oxygen constitutes eight-ninths by weight, and about one half of its more abundant solid contents, water occupies in the shape of the ocean, unknown in depth, lakes, and rivers, nearly three fourths of the surface of our planet; the solid earth is chiefly made up of the oxides of one non-metallic body, silicom, and two metals, aluminum and calcium. To these may be added potasium, whose oxide is a constituent of felspar, the characteristic ingredient of granite; sodium, of which the water of the ocean is the great depository; and iron, whose oxide is to be found every where to a greater or less extent. These substances really include all the known components of the earth; other substances, such as magnesium in a state of oxide; sulphur in a state of gypsum, and in union with certain metals, are found here and there, in local deposites of considerable extent, while the others are all still more limited in their distribution. In the organic world the same, or still greater simplicity is observed, carbon, hydrogen, oxygen, and nitrogen, a little phosphorus and sulphur, and sometimes a small proportion of two or three alkaline and earthy salts, are the sole materials which have been employed in the construction of those countless multitudes of orders of living objects which people the earth, and clothe it with beauty. This apparent paucity of original materials is, however, more than compensated by the very peculiar properties of some of those selected.

Carbon, hydrogen, oxygen, and nitrogen, are distinguished above all other bodies by the innumerable compounds they are capable of forming, by union among themselves. Modern organic chemistry, vast in variety as it already is known, consists of little more than the study of these four elements and their combinations. Geology has been of late years studied with much success, and the mode in which particular structure, or arrangement, of the beds and masses of rocks which form the solid earth. The evident design and contrivance exhibited in the disposition of our mineral treasures must convince the mind, of fore-thought and provision for man's necessities and comfort. We see in the English coal-field, excellent iron-ore lying inter-stratified with the fuel necessary to reduce it; we observe the lime-stone used as a flux, and even the very grit and fire-clay to build the furnace are all to be found in one and the same series. This curious relation of the ore and the fuel enables us to obtain, at a cheap rate, this noblest of all the metals, which is applied to innumerable purposes of daily life and convenience: we see again the same design of our Creator for the benefit of man, in the mountains of Sweden and Norway, which contain inexhaustible beds of magnetic iron-ore, which when reduced by charcoal, yields the finest and purest bar-iron for making steel. Now since wood charcoal is the only fuel we know of, fit for employment on this occasion, forests of pines have been accordingly planted by the provident hand of God in these desolate regions, by means

of which the iron-maker is enabled to pursue his labors. Another instance of prospective contrivance, out of thousands of equally interesting facts, is the material constituting the great mountain chains which ridge and furrow the earth's surface, and upon whose flanks and lower slopes rest the different stratified aqueous deposits of conglomerate slate and sand-stone, and calcareous matter, great part of which has been directly derived from the mechanical degredation of the central mountain nucleus itself—this material is granite, which has been, as it were, deliberately chosen from a previous knowledge of its peculiar chemical fitness for the office in question. It is obvious that to animal existence a supply of food is indispensable, which must be derived, either directly or indirectly, from the vegetable kingdom; animal life, therefore, presupposes vegetation. Now besides the organic constituents, as carbon, hydrogen, oxygen, and nitrogen, which plants derive from the atmosphere, they are also known to contain, in every case and without a single exception, other substances equally indispensable to vegetable life; these substances are the alkalies, potash, and soda, phosphoric and sulphuric acids, lime, and magnesia, silica, &c.; these form the contingent of the food really furnished by the soil in which the plant grows, and are just as necessary to its well-being as the carbonic acid or the water it gets from the air. The most indispensable of these principles to land vegetation is potash; another, perhaps equally important substance, is phosphoric acid, a body as universally diffused in the vegetable kingdom as potash itself. The reason of this provision will at once appear, if we recollect the important function fulfilled by one of the earthy phosphates in the animal economy, viz. the phosphate of lime, which gives strength to the bony frame-work of the animal body. Now the source of this phosphorus, there is every reason to think, is to be found in the ancient massive granite, forming the basis of our present system of continents, and also of potash.

Doubtless in the arrangements of gases, and stratum of minerals, there is a design for the creation and support, first of vegetation, and secondly for animals, which would not exist without the former; and all are subservient to the necessities and convenience of man. The best and most economical mode of supporting nature, should be extensively known; therefore I subjoin the following very interesting report on the comparative nutritive properties of food which was lately presented to the French minister of the interior, by Messrs. Percy and Vauquelin, two members of the Institute. The result of their experiments is as follows:—

In bread, every hundred pounds weight are found to contain eighty pounds of nutricious matter; butcher's meat, averaging the various sorts, contains only thirty-one pounds in one hundred pounds; French beans, eighty pounds; peas, twenty-three pounds; lentils, ninety-four pounds; greens and turnips, which are the most aqueous of all vegetable matters used for domestic purposes, furnish only eight pounds of solid nutricious substance in one hundred pounds; carrots, fourteen pounds; and what

is very remarkable, as being in opposition to the hitherto acknowledged theory, one hundred pounds of potatoes only yield twenty-five pounds of substance valuable as nutricious. According to this estimate, one pound of good bread is equal to two and a half or three pounds of best potatoes; and seventy-five pounds of bread, and thirty pounds of butcher's meat, are equal to three hundred pounds of potatoes. Or again, one pound of rice, or of broad beans is equal to three pounds of potatoes; while one pound of potatoes is equal to four pounds of cabbage, and to three pounds of turnips."

In corroboration of the theory of Liebig, Boussingalt, and Dumas, of the different properties of food, we have much pleasure in quoting from the work of Dr. Thomson of Glasgow "Experimental Researches on the Food of Animals, and the Fattening of Cattle, with Remarks on the Food of Man." Liebig has shown that the constituents of food are divided into two principal elements, Nutritive and Respiratory, for the latter term Dr. T. prefers Calorifiant or Heat-producing elements, and he states that the following are the relative proportions of nutritive to calorifiant matter in various articles of diet:—Milk, 1 to 2; Beans, 1 to 2½; Oatmeal, 1 to 5; Barley and Semolina (Indian corn), 1 to 7; English wheat flour, 1 to 8; Potatoes, 1 to 9; Rice, 1 to 10; Turnips, 1 to 11; Arrow-root, Tapioca, and Sago, 1 to 26; Starch, 1 to 40. The following remarks of Dr. Thomson on the food of Children are interesting to all parents, and ought to guide them in making their purchase with judgment of nutricious food; so as not to be deceived in buying trash called *Farinaceous Food* which starves their infants although unfortunately commended by medical men:

"Milk in some form or other, is the true food of children, and the use of arrow-root, or any members of the starch class, where the relation of the nutritive to the calorifiant matter is as 1 to 26, instead as 1 to 2, is absurd. Arrow-root and Tapioca are prepared by washing the roots of certain plants until all the matter soluble in water is removed. Now as albumen is soluble in water, this form of nutritive matter must in a great measure be washed away; under this aspect we might see the original root before washing approximate in its composition to flour. If the latter substance were washed by repeated addition of water; the nitrogenous or nutritive ingredients would be separated from the starchy or calorifiant elements, being partly soluble in water, and partly mechanically removed. Arrow-root, therefore, may be considered as flour deprived as much as possible of its nutritive matter. When we administer arrow-root to a child it is equivalent to washing all the nutritive matter out of bread, flour, and oatmeal, and supplying it with starch; or it is the same thing approximatively as if we gave it starch; and this is in fact what is done, when children are fed upon what is sold in the shops under the title of '*Farinaceous Food*,' empirical preparations of which no one can understand the composition without analysis."

Of the bad effects produced in children by the use of most exceptionable mixtures, I have had ample opportunities of forming an opinion, and am inclined to infer that many of the irregularities of the bowels, the production of wind, &c., in children, are often attributable to the use of such unnatural species of food. It should

be remembered that all starchy food deprived of nutritive matter is of artificial production, and rarely, if ever, exists in nature in an isolated form. The administration of the arrow-root class is therefore only admissible when a sufficient amount of nutritive matter has been previously introduced into the digestive organs, or when it is inadvisable to supply nutrition to the system, as in cases of inflammatory action. In such cases, the animal heat must be kept up, and for this purpose calorifiant food alone is necessary. This treatment is equivalent to removing blood from the system, since the waste of the fibrous tissues goes on, while an adequate reparation is not sustained by the introduction of nutritive food. A certain amount of muscular sustentation is still, however, effected by the arrow-root diet, since, according to the Doctor's preceding tables, "it contains about one-third as much nutritive matter as some wheat flours. The extensive use of *Oatmeal*, which is attended with such wholesome consequences among the children of all ranks in Scotland, is however, an important fact, deserving serious consideration; and it appears to me, is strongly corroborative of the principles which I have endeavoured to lay down in the preceding pages." p. 169—171. We are perfectly satisfied of the great value of the above observations, and that the public should be aware that the basis of the *farinaceous* food sold in shops for children, is principally potato starch, which is also sold for about ten pence or a shilling a pound for arrow-root; children are starved upon it, disease is thereby engendered, and death too often closes the scene. Dr. Thomson makes several observations upon making bread by the admixture of various flours, and judiciously commends the manufacture and use of bread without the usual process of fermentation; we have eaten bread prepared in the manner described by him, and in every sense highly approve of it; it is an economical, simple, delicious, and nutricious bread: the process will hereafter enable sailors to have fresh bread on board ship, and at the same time it will emancipate journey-men bakers from their very unhealthy nocturnal toils, and enable the public to make or buy more wholesome bread than is now eaten, prepared after the old plan. Dr. T. asserts that a sack yields 107 loaves of unfermented, and but 100 of fermented bread; 6½ per cent. being lost by the ordinary process of baking. Dr. T. furnishes the following formula for *making unfermented bread*:

"Take of flour, 4 pounds; Sesquicarbonate of Soda, 320 grains; Hydrochloric Acid, 6½ fluid drachms; Common Salt, 300 grains; Water, 35 ounces by measure. The Soda is first mixed with the flour very intimately. The Salt is dissolved in the water, and added to the Acid. The whole is then rapidly mixed as in common baking. The bread may be either baked in tins or formed like cottage loaves, and should be kept from one to two hours in the oven. Should it prove yellow, it is a proof that the soda has been in excess, and indicates the propriety of adding a small additional portion of acid; the acid varying somewhat in strength." p. 185.

Now that baths and wash-houses will doubtless, very shortly, be

built in every parish, it appears to us very practicable to build public ovens, to be heated by the same fires, for the benefit of the poor throughout the country.

Brown bread when made with a certain proportion of bran is more wholesome than white bread made of pure flour; a man living on the latter with water, would soon become diseased and even die; whilst on the former, he would live healthily. The best food for infants, during the first five or six months, is its mother's milk and when the infant is old enough to be partly fed, and immediately after weaning, milk thickened with flour by being well boiled, or bread treated in the same way is the best. When the front teeth appear, bread and milk, or oatmeal boiled, (stir-about) which is simply oatmeal boiled in water and made as thick as butter in warm weather and eaten in cold milk or in broth. Good meat broth and bread is also excellent, meat gravy and bread, bread and butter and mealy potatoes, or a little meat boiled may be also eaten. This is the best, simplest, and least expensive food for children and will keep them in health. The animal and vegetable food of children should, like that of adults, be continually varied, particularly the latter portion of it, adults never do well on one particular kind of food, hence, even bread should be made of various flours. When infants' teeth are through the gum, indicating the propriety of giving animal food, then preference should always be given to boiled meat, as chickens, mutton, and veal, being always more easily digested than roasted meat: adult invalids should observe the latter rule.

Chemists consider the calculations of Messrs. Percy, Vauquelin and Dr. Thomson, to be generally correct, in respect to the proportion of nutricious matter in different food in common use for the support of man; and its economy should be disseminated as widely as possible: although the edibles enumerated and examined are few compared to what man consumes for his support or gratification, yet they are those most essential and common in use. Doubtless over and above the whole known present list of edibles, the genius of man will, in every generation, infinitely increase and improve them as he has hitherto done. The rapid stride of civilization has peculiarly marked the power and genius of man to improve in quality and quantity, his food, and in nothing is this more remarkable than in the cereal grains, wheat, barley, oats, &c., which are, in their normal or original state, thin and very poor, and scanty in nutriment. Again, the potato was imported very small and poor; carrots in their original state are very small, long, and as small as one's little finger; turnips, beet, parsnip, onions, were very small, but now are grown in very great abundance, thirty or forty times larger than they were originally, ere influenced by the intelligent cultivator, and are more agreeable to taste and more nutricious. Celery naturally growing in ditches, near the sea-shore, is of an acrid, coarse, rank flavor. Asparagus is (likewise a sea-shore plant,) wonderfully changed, and so is our cabbage, and even varied to the cauliflower, &c. The original colewort is a small plant

weighing about half an ounce, but by culture it often grows to thirty pounds, and is named drum-head cabbage. We may also add to the list sea-kale, artichoke, endive, spinach, &c., in short all our esculents and salads have been quite altered, and some have been improved in the intrinsic properties, from sour to sweet, from acrid to agreeable, or from poisonous to wholesome. The sour crab and the sloe of our hedges are the parents of the great variety of apples and plums; again, the hazel-nut and wild cherry, &c., have, by culture, been converted into delicious and nutricious fruit.

Thus we perceive that as the civilization of man progresses, his genius has not only changed all known edible vegetables in size, external character, and intrinsic properties, but has transformed them from dry, acrid, and noxious, to fleshy, pleasant, and wholesome products. We have only particularized a few for example, to show that vegetation is endowed with a wide range of adaptability to administer more fully to the growing wants of man; judging from what has been done, we may reasonably conclude that there are yet many species in our country equally fitted for cultivation for the use of man. Still the potato, although confessedly a great blessing, has been the means of repressing the energetic enquiries of man after other edible roots and plants. A healthy tone of frame does not depend upon any particular course of diet, *i. e.* which does not contain *all* the proximate elements of the frame; as the human body is composed of a variety of textures, differing in their chemical composition, so a variety of food is required for its perfect nourishment. No one proximate principle is of itself adequate to support life; if any such substance be administered alone to animals, they will perish sooner or later with signs of waste. On this subject a commission was lately appointed by the French Academy, and which reported that neither gelatine, albumen, or fibrine, alone, will support either man or animals. A complex machine made up of many different kinds of substances, requires for its repair a corresponding variety of materials; the fabric of man's body is likewise compounded of divers parts derived from albumen, fibrine, gelatine, caseine, &c. From these proximate principles, the various textures are produced to supply the wear and tear that continually goes on in man.

Besides the essential elements of these proximate principles which are obtained by ultimate analysis, we find certain salts mixed with them. In albumen,—phosphates, sulphates of earths, alkalies, and chloride of sodium; in fibrine—phosphate of lime; and in caseine, the same salt, in the proportion of 6·24 per cent. As the phosphate of lime is the same as bone earth, the existence of it in union with the proximate principle, which forms the chief constituent of milk, seems to have reference to the progress of ossification during the growth of the infant.

Again, protine, a substance discovered and named by Mulder as being the radicle of the proximate principles; or in the lang age of Liebig, the commencement and starting point of all the tissues,

in every respect the same as that which forms the basis of the proximate principles, albumen, fibrine, caseine, gelatine, chondrine, elaine, stearine, margarine, hœmatosine, globuline, and may be obtained from similar elements in the vegetable kingdom. Gluten, which exists abundantly in the seeds of the cerealia (wheat, barley, &c.,) yields a principle which is called *vegetable fibrine:* the same substance coagulates spontaneously in the newly expressed juice of vegetables. From the clarified juices of cauliflower, asparagus, mangel-wurzel, or turnips, when made to boil, a coagulum is formed, which cannot be distinguished from the coagulated albumen of serum or the egg: this is *vegetable albumen.* And in peas, beans, lentils, and similar leguminous seeds, we find a substance similar to caseine: it is *vegetable* caseine, which, like the animal principle of the same name, does not coagulate by heat alone, but yields a coagulum on the addition of an acid, as in milk: Liebig says—

"The chemical analysis of these three substances, has led to the very interesting result, that they contain the same organic elements, united in the same proportions by weight; and, what is still more remarkable, that they are identical in composition with the chief constituents of blood, animal fibrine and albumen. They all three dissolve in concentrated muriatic acid with the same deep purple color; and, even in their physical character, animal fibrine and albumen are in no respect different from vegetable fibrine and albumen. It is especially to be noticed that by the phrase identity of composition we do not here imply mere similarity; but that, even in regard to the presence and relative amount of sulphur, phosphorus, and phosphorate of lime, no difference can be observed."

The proximate principles enumerated are the constituents of the animal food, upon which the human race, and the inferior creatures principally subsist; and the discovery that similar principles exist in the vegetable kingdom, also adopted for food, is of the highest interest, as proving that both kingdoms of organized nature are capable of affording materials which are suited to supply the waste in the animal tissues, which is the necessary result of their vital actions. The blood is the immediate *pabulum* of the tissues; its composition is nearly or entirely identical with them, it is therefore necessary to support the system with due and proper quantity of the proximate principles; for the process of nutrition consists in the attraction of certain of these principles from the blood, and the appropriation of them by the textures and organs, in a form assimilated to that of their elementary parts. It is therefore evidently of more importance that attention should be paid to the quality, than to the quantity of the food administered for preserving and improving the physical properties of the tissues, and insuring vigorous health, compact and well-formed figure; whilst as assuredly the want of judicious variety of food, pure air and water, will induce feeble tissues, general weakness, and delicacy of health, relaxed, half dislocated limbs, a nervous, timid, and hysterical system, that we continually see amongst town inhabitants living in warm close rooms, excluded from a sufficiency of oxygen, unventilated, ill-drained, and ill-supplied with the necessaries and comforts of life.

SECTION X.

History attests that the principle of progressive humanity has always been in proportion as civilization advances from its infancy to its present comparative maturity. It would also appear that the principle of progressive civilization is a law of nature, depending upon superior material condition in the human economy, in enlarging particularly the boundaries of the nervous and muscular structures, into more perfect outlines of proportion and form, *i. e.*, building as it were, *pari passu*, with every new circumstance that influences rudimental improvement throughout all generations. Without this there would be no imaginable reasons or means of realizing the successive additions of civilized activity, and of transmitting therefrom enhancement of the natural aptitudes and capabilities to posterity.

Successive pictures of human society, from the wretched existence of the stupid, pigmy savages lately exhibited in Piccadilly, to our own mighty civilization, would, if properly interpreted, be made to disclose the corresponding physiological states and relations, and would become conclusive evidence of the progressive evolution of a higher character of organization. In the like manner, the same method of enquiry might be pursued with regard to the history of human thought and ideas from man's first limited range of perception, to his present comparatively magnificent intellectual position. This position, if judged by a correct metaphysical analysis, might be resolved into the elemental principles of mind, evolved from the development of its related condition with the nervous system, and forms the last addition to the great circle of evidence, which, estimated by physiological principles, will give irrefragible proof, to every philosophic mind, of the harmonious and combined evolution of the physical and moral organization in the human species.

In the first periods of pure feudalism the circle of human life and human actions was very circumscribed. A restless instinct for aggression and war, for feats of arms, for rapine and marauding expeditions; an attitude of defiance and hostility towards bordering nations, and a spirit of feud between the nearest territorial possessors; the pleasure of the chase, and a grossness of indulgence in the coarser appetites, comprehended nearly the whole activity of the people.

The animalism of savage life, together with the modified change that followed the feudal system of the semi-barbarous ages, were in the course of innumerable generations, doomed finally to give place to the observances of moral practice, and social habits of civilization, in tilling the land, and in cultivating by commerce, inter-national communications and interchange of intelligence, customs, and usages of different nations.

The cause of these preparatory changes in England for a higher degree of civilization, were mainly the engrafting influence of

foreign blood upon the original Celtic stock, and of all modern nations, this country more perhaps than any other, has a greater proportionate admixture of the best races, which, when deciphered by a proper physiological analysis, may be made to disclose the whole history of the successive changes effected in the physical man, and, above all, to point out the way, by induction, to the historical demonstration of God's Providence in the design and conduct of humanity. Out of this element alone can be obtained our chief means of estimating the character and powers of different nations and races, according to their political, moral, and intellectual capacity.

Thus it appears that every stage of progressive amelioration of the condition of man is invariably dependent upon a material representation in the nervous organization. The superiority of the configuration of the civilized man's head over that of the savage is remarkable, and indeed in the different races of our own countrymen, which is accounted for thus, by the admixture of foreign blood upon the original Celtic stock. There was first engrafted the Roman civilization; after awhile, came the frequent emigrations of the Saxon tribes; and lastly, the national character receives its full accession of strength and impulse from the flower of the famous Scandinavian races in the Norman invasion and settlement. It was the union of the two great elements of modern civilization, the Roman and the Germanic, the one giving us our municipal institutions and government, the others our sense of individual liberty and independence. It is remarkable, that where these new elements did not penetrate, civilization has remained almost stationary, or at least, very backward, as in Wales, the Highlands of Scotland, and, indeed, in some localities in England. In Ireland, above all, there is a striking contrast between the semi-barbarism of the counties where the old Celtic races remained uncrossed by foreign blood, and between the flourishing condition of the districts colonised by those of Scotch and English extraction, fully exemplified in the difference of social progress made by the southern and northern populations of the island. In France, also, where there took place a copious intermixture of the Frank and Germanic races with the old inhabitants, as in its northern provinces, the intelligence, the physiological value, and social condition of the population is much higher than in those parts where the Celtic races have remained pure and unmixed, as in Brittany, Auvergne, and many other departments of the kingdom. Even Germany, inhabited as it is by a race ranking the highest in native intelligence and moral qualities, suffers from exclusion of proper foreign intermixture, and develops its civilization with less freedom and success than more favored nations. In addition to these examples it would not be difficult to adduce many others, scattered throughout the European and Asiatic continents, particularly amongst the Sclavonic races. The stationary civilization of the exclusive Chinese and Turkish nations (until lately) are however, too striking examples to need particularising. Thus we may be

assured that mankind may be improved by attending to certain principles of intermixture and by judicious food, in the same manner as animals and vegetables have been gradually improved.

Doddridge makes the following observation with respect to the mode by which matter is governed.

"When we assert a perpetual divine agency, we readily acknowledge that matters are so continued as not to need a divine interposition in a different manner from that in which it had been constantly exerted. And it is most evident that an unremitting energy, displayed in each circumstance greatly exalts our idea of God, instead of depressing it; and therefore, by the way, is so much more likely to be true."

Those animals and vegetables that man requires have invariably increased in variety, quality, and individual quantity with his progress in civilization. God foresaw the increase and the wants of his people; he therefore implanted a law, (called natural law) in all matters not excepting man, a capability of gradations of advance; hence the variety both of man, and of the animal and vegetable kingdoms; their external peculiarities have been dependent upon certain agency and conditions favorably adapted for their advance or retrocession.

Hence we may admit that there is as much natural difference between the various qualities of blood, and of organization in the human species as there is between the finest porcelain and the coarsest potters' clay; and the philosophical laws presiding over hereditary transmission of superior or inferior qualities, are governed by favorable or unfavorable circumstances. The riches of the British mines have been the important means of improving the character of the people. First by inducing the Romans and the Saxons to visit our land, and to commingle their blood with the natives, and render the latter more susceptible to receive and improve moral lessons of civilization, and to cultivate commercial and manufacturing occupations, which our island so peculiarly favors; and in which our people have succeeded, in a greater degree, than any other in the world.

Commerce stimulates the acumen of the dullest people to the readiest means of obtaining their wants, and to create new ones; thus intelligence is awakened, and knowledge rolls increasingly with every generation, as well as their aptness to receive information. We see daily in common transactions, how much not only a connection, but a constant personal intercourse and conversation with a variety of people whose wants, tempers, and manners are very different, tends to civilize mankind, arising wholly from the necessity there is in varied society of a mutual accommodation to the disposition of each other; hence those who are inhabitants of towns, are more polished than those of the country, for the former have comparatively a more extensive and varied communication with the world than the latter.

Commerce has imparted to the laws of civilized nations a peculiar regard to the property of merchants, use of the seas, distressed and foundered vessels, drifted property, &c., which receive no protection

from savage nations. Thus it appears that from the earliest times commerce has favorably excited the moral as well as the intellectual faculties; it therefore tends to exercise favorably our faculties for private and public duties, and to improve the memory; it introduces a methodical arrangement into the business of life, which facilitates it greatly, by instructing us to apply our abilities separately to their proper useful purposes, and thereby enlarges the ideas; teaches individuals and nations their true interest, and removes eventually pernicious prejudices of vain and assumed superiority, low cunning, and illiberality, so common amongst isolated and demi-civilized people. Indeed astronomy, navigation, mathematics, mechanics, the arts of working metals and chemical manipulations are connected with, and greatly promoted by commerce, in short every science directly or indirectly.

Necessity and interest are the primary exciters of the mind to action, order, and subserviency to the interest of the individual, as well as to the community. Abercrombie thus writes:—

"When we turn our serious attention to the economy of the mind, we perceive that it is capable of a variety of processes of the most remarkable and most important nature. We find also, that we can exert a voluntary power over these processes, by which we control, direct, and regulate them at our will, and that when we do not exert this power, the mind is left to the influence of external impressions or casual trains of association, often unprofitable, and often frivolous. We thus discover that the mind is the subject of culture and discipline, which when duly exercised, must produce the most important results on our condition as rational and moral beings; and that the exercise of them involves a responsibility of the most solemn kind, which no man can possibly put away from him."

We conceive it is the duty of every nation to stimulate the acumen of their rising generations by education, example, and interest to serve themselves, and thereby the community. A low educational standard of any country renders the national tone or temper self-sufficient, more or less morose and intolerant, narrow-minded, and exclusive.

The fact is illustrated in Ireland, whose people in the mass are very ignorant, cannot render useful the natural wealth of their country, and readily join in the ranks of designing men who cry for repeal of the union, their inevitable ruin. Conciliation Hall has already split, and will doubtless continue to do so until its speedy dissolution. The rotten social condition of the Irish can be favorably altered only by the same means that improved Scotland, viz., cheap education for the rising generations. Some hundred years ago, scarcely a Scotchman who was not paid for it, held up his hand for the union, but now not a sane man throughout the country would hold up his hand for repeal of the union or for the restoration of the clanships. The Irish are at least a hundred years behind the Scots, and will continue to be so, a wrangling plague to themselves and to England if education is not enforced upon their great natural genius

and aptness for superior acquirements. which will cause them to appreciate and use its innumerable, but neglected blessings, having a local position for traffic, internal wealth, and convenience for manufacture far superior to Scotland.

The blessings of commerce with more enlightened nations never fail to stimulate the dull perception of the most isolated people, and teach them to feel their deficiency in general knowledge, a condition which however partially established amongst the people will soon engender a more general desire for education, the basis of a correct mode of thinking, and of a higher moral tone of the nation, liberal and generous feelings, and probity in their mutual commercial dealings, and with their fellow-men of every nation; thus described by Robertson:—

"Commerce tends to wear off those prejudices which maintain distinctions and animosity between nations. It softens and polishes the manners of men. It unites them by one of the strongest of all ties, a desire of supplying their mutual wants. It disposes them to peace, by establishing in every state an order of citizens, bound by their interest, to be the guardians of public tranquillity. As soon as the commercial spirit acquires vigour, and begins to gain an ascendant in any society, we discern a new genius in its policy, its alliances, its wars, and its negociations."

Mutual dependence is the first element of civilization and the essence of society. We for instance cannot depend upon foreigners without foreigners depending upon us, therefore if we refuse to depend upon foreigners as producers, we must consent to forego dependence on them as consumers. All commerce ultimately resolves itself into barter.

This high state of civilization is favored by every improvement made in the material prosperity of a nation, since it involves a proportionate increase of the nation's responsibilities to excite their acumen and judgment. Progressive development of civilization must in every generation depend upon the care bestowed on the means of keeping up the ascendency of intelligence over matter or animalism, by rendering individual improvement commensurate with social advancement. Since nothing is stationary in humanity, we must advance collectively, or else those who are left behind are likely to become an increasing element of retardation. In Spain the poor were left by the Nobles of the land, to the charge of the Priests, who gave a daily pittance for their wants, until the pride of self-dependence was destroyed in them, education was neglected, and they became the more willing serfs of the religious houses: thus Spain has fallen from the highest state of civilization amongst European States to the lowest.

It has been observed that the faith of the pompous rites of the Roman and Greek churches are the more readily received by the uneducated, than the simple rites of the spiritual form of worship adopted by the Protestant Churches. So we find invariably that those nations continuing in those religious faiths are the

lowest in the scale of commercial vigour, industry, wealth, and liberal or enlarged sentiments, as Greece, Austria, Spain, and Ireland, for example, where civil strife, murder, and robbery eternally staulk in the open day. The predominant religion of a country characterizes the people, as regards their moral, social, and commercial condition.

The more uncivilized a country is, the more intolerant, bigotted, self-sufficient, and exclusive are their tariffs. Indeed it would seem undeniable that the less a country's imposts upon commerce, the more it marks its superior progress in enlightened condition. For instance, the Spaniards, Italians, Austrians, Portuguese, and other Catholic countries, and the Russians, whose religion is somewhat alike in its rites with the Roman Catholic Church, keep up a host of tariffs, custom-houses, and revenue officers, like the Chinese, who fancy that independence and power are only to be gained by producing and manufacturing at home all necessary articles of consumption, at a greater cost than they might be supplied to them by foreigners. Thus by prohibition, they necessarily encourage the practice of smuggling, to the destruction of their legitimate commerce. In France, when the restrictive or anti-commercial legislation was most strict under Napoleon, their commerce was nearly annihilated, and now it is very low, whilst her agricultural produce very slowly increases in respect to vegetable food; fourteen bushels to the acre is the average crop, and the breeding of all kinds of animals has of late years diminished. In the United Kingdom, all kinds of vegetable and animal food together with useful animals, has annually considerably increased with less favorable soil and climate; the estimate average crop per acre is about twenty eight bushels, forty bushels of wheat is common on good farmed land, and even fifteen or twenty on indifferently managed land. In the extreme north of Scotland, in the valley of Contin in the highland, upwards of five quarters of wheat and seven of oats per imperial acre are produced. According to official documents on the 'Agriculture of France,' by M. Mounier, with remarks by M. Rubichon, the estimate number of oxen, cows, and calves is only 9,883,053; and in Great Britain it is 16,500,000; In France there are 31,864, 247 sheep; in Great Britain, 60,000,000; In France, horses and foals only 2,801,066; consequently the horses for her cavalry and police force are nearly all imported from England, amounting to about 55,000 for her cavalry alone. The above gentlemen state that the Revolutionary law of dividing the land of a parent equally amongst his children or next of kin, into small parcel or morcellement has and continues to diminish the production of animal food every year, and not to increase that of vegetable food in proportion to the increase of population. The same authority states that the assessed value of France is £62,541,000 and that of England and Wales for the poor rates £62,540,000; with a population not quite one half, or of one third the extent of France. The low produce of France must also be attributable in a great degree to the low education

of the poor, and to the high price of their own, and the high duty on foreign iron, hardware, and machinery, and the general want of reciprocal interchange with other nations. The Austrians, Spaniards, Portuguese, Italians, are in a still worse condition, being governed by a very impolitic commercial code of laws. The agricultural produce of all Catholic countries is proverbially ruinously low, with the exception of the Belgians, who certainly farm their land with talent and industry; but their laws of commercial restriction are more strict if possible than any other Catholic nation on the continent; and doubtless must bring on the people, sooner or later, penury, together with habits of smuggling and its contaminating baneful influence.

Commercial and financial legislation upon erroneous principles of restricting goods from a foreign country, because they are cheaper than what can be produced in that country, will invariably cause men to smuggle effectually in spite of laws the most vigilant country can invent, as for instance in England.

A sound system of finance once established, no further measures would be required for the advancement of industry; because under such a system all articles would be taxed so moderately, that neither their production at home, nor their importation from abroad, would be prevented or checked. Every country has its own peculiar advantage, either in clime, produce, or means for exportation at a cheaper rate to the local consumer, or even the foreigner, because to obtain those peculiar products the one may be in want of iron, wood, and machinery, or the other of the food produced in another country, to avail themselves of their own partial advantages. Thus a reciprocal interchange of produce of nations, would supply all with the necessaries and luxuries of life in the cheapest manner possible; and yet bear a small tax for the exigency of every nation. Universal peace would be established, industry encouraged, capital and labor diffused, science and polite learning would be cultivated, blind fanaticism, sordid and selfish jealousy driven into oblivion, and man received by his fellow man consonant with the laws of God and the highest degree of civilization.

Restrictive tariffs of nations are the consequence of fear of want of occupations for the people, and of losses to a certain favored few; whilst undoubtedly the commodities produced by agriculture, mining, and manufactures, and the commerce with foreign nations, are so many elements of national wealth, which cannot be unduly favored or restricted without injury to the whole community, and individual country, and ruinous to their fiscal, agricultural and commercial interest. For instance, Austria has long followed the pernicious system of monopolies and prohibitory duty, and thereby impoverished her people, and exhausted her treasury, as have many other nations: Russia, China, and even America have of late adopted the prohibitory duties, but whether for ultimate good is as yet undetermined.

Holland with a liberal fiscal and tariff legislation, destitute of the peculiar advantages of soil and climate of France, Spain, and other

countries, has less suffering than any other country in the world; and those who are distressed are better sheltered, clad, and fed, without poor laws, than in any other part of Europe. Begging there is not known as a profession as it is in most other, and particularly in Catholic countries, as in Spain, Italy, and Portugal. Mr. Macgregor says in his commercial statistics, that the Dutch, "by their hatred of tyranny and oppression have allowed religious liberty. It is wonderful that a country subject to such sudden inundations, that the people have given it a firm foundation, and raised formidable barriers to the inroads of the ocean and the floods. They have without stone or timber in their country, built spacious cities and superb edifices; the foundations and superstructure of which they have carried from afar. Without possessing, at home, any one material used in the construction of a ship, they have built navies that have swept the flags of their former tyrants from off the ocean, and they have disputed the seas with the most formidable fleets. Without arable land, their cities became granaries for supplying Europe: and with a territory not so extensive as Wales, and the people at all times subjected to heavy taxation, their army, their fleet, and their commerce have enabled them to rank high among the nations of Europe."

The history of Holland admirably demonstrates the importance of reciprocal interchange of the produce of nations upon free-trade principles, or at least a very modified tariff, according to certain circumstances. The liberal measures that Sir Robert Peel has been able to carry through the House, have been carried by that revered connecting link of parties, the Duke of Wellington.

"Skilled to command, deliberate to advise,
Expert in action, and in council wise."

Nations should regard one another as one large family engaged in commerce, and widely dispersed over the world; and assist one another according to their local advantages with the produce of their energies, capital, and advantages of means and ability. Iron is an essential material for agricultural pursuits, without which, land cannot be properly prepared to produce a full crop of corn even in good soil, and favorable climate. Hence in some countries, wheat can be produced cheap by having abundance of iron and fuel to smelt it, in the locality of the mine, as in many districts in England, and coals cheap in every part to manufacture necessary tools. For want of these local advantages in France, the agricultural produce with superior soil, and climate, is much below the average per acre to what it is in England. In France, iron can neither be produced or manufactured into tools so cheap as it may be imported, duty free, or even at moderate imposts, from England, or Sweden. In short, the true principle of commercial prosperity consists in division of labor; instead of attempting individually to complete every article in demand under every natural, local, or circumstantial disadvantage, and thereby necessarily at very much greater cost than it could be obtained, and finished from one or two

foreign countries. For instance, Gunpowder is made in England from nitre, found abundantly in the earth in Egypt; wood, made into charcoal from Sweden or North America, where it can be made cheap; and sulphur from Sicily, where it is found pure, in inexhaustible quantity: vast numbers of people are supported in obtaining, preparing, and exporting these ingredients, and in compounding them into the powder, and still infinitely more in the economical use of its power in blasting our rocks for building, and for making lime, to obtain coal, iron, lead, copper, tin, &c. This combustible power is now readily obtained by dipping cotton wool in sulphuric and nitric acids, at little expense or trouble.

We need not dilate upon these principles of free-trade, since they have been ably explained by various writers, and justly appreciated by the enlightened public, which no ministry will be able long to withstand.

Nations can never be just in making laws to distress one, and starve another; God provides abundant necessaries in some, and luxuries in others. Therefore, were it not for fiscal laws, the people would better supply their wants to the benefit and comfort of all: we have no right to grumble at the enormous expense of our able bodied poor being kept idle in unions, since we suffer disgraceful and inhuman laws to prevent raw materials being imported, to give them occupation and enable them to buy with their own labor what they require of other nations, willing to sell.

Our poor neither would ask nor want the charity of their countrymen, were these unholy laws removed; for then they would feel with gladness the pride of self-dependence to secure their independence; by having at a cheap rate the necessaries of life: more abundant employment, better wages, and a larger share of the comforts of life, would inevitably follow; a benefit that would spread throughout the whole community, by increasing the consumption of the necessaries, comforts, and luxuries of life. Thus increase the happiness and prolong the life of the people, reduce the number of cripples, idiots, thieves, and all the demoralization generally attending inactivity and mendicity, granting them cause to venerate and love our constitution, and respect the laws, when administered with equal justice to all classes: but this is not the case as long as the poor cannot have recourse to law for redress, without ruination with its expenses.

It appears that the arrangements of our merciful Creator are wisely spread over the globe, for the safety and comfort of man, to whom he gave intelligence to conceive, and means to commune with his fellow man over the globe, and thereby making his necessities the means of conveying the gospel for his salvation. Intercepting the bounty of God is to distress the people of one nation, by preventing them selling their productions to another, who may be in want of them; and at the same time tends to keep up isolated people and barbarism; for it is well known, that in uncivilized times, neighbouring states in Europe were regarded by each other as

foes, and rivals, and engaged in incessant hostilities; a condition in Ireland and some other countries, still unfortunately in active operation.

If it be replied that grave interest of invested capital on our land requires this interposition of the law; we could answer, even were the excuse real, that the interest of life, and happiness of many, should not be sacrificed for the interest of few.

The history of monopoly, which was most rife in less civilized days, proves it ever commanded its own price. Relaxation or removal of such unjust laws in favor of monopoly were never followed by those evil forebodings, and imaginary alarms set forth by the interested; and the interested competition invariably benefitted the state, and the people: for example, in modern times, the East India Company opposed the opening of the trade with India in 1814. What followed? why an increase of exports from Great Britain to India. In 1824 the silk manufacturers predicted the ruin of the silk trade, if the duties on silk should be lowered; yet the effect has been, very considerable increase of trade. Removal of duties has been followed by an increase of trade upon all materials, as coffee, sugar, foreign wool, cotton, &c Why should not the same advantage follow the removal of the corn laws, and the duties upon all necessaries of life?

SECTION XI.

The productive classes are often unjustly represented as thoughtless, ungrateful, and intellectually dull; and the task of improving their condition, almost hopeless and of doubtful utility. Therefore they are doomed to irremediable wretchedness; just as if the poor were an inferior work of God; bringing out more prominently, and offensively, the superiority of the rich classes, who in giving an ill-directed and indiscriminate alms, minister no less to their own vanity than to the encouragement of the profligate mendicants, and the vicious tendency of the example.

The fact is, the poor are invariably just, grateful, and moral, according to their treatment by their superiors, whose duties in right of their property is to organize a national system, by which the utmost possible good may be effected to the indigent, and the operative classes, not by fitful donations, but by removing restrictive duties upon necessaries and conveniences of life, in order to supply work, and favor competition with the world.

Lord John Russell has proposed an excellent principle for relieving the distressed condition of Ireland, that is, to compel property to sustain labor as long as labor is seeking for occupation: it is desirable that the same principle should extend over the United Kingdom. With capital and combined physical force, labor may be found abundantly remunerative to the country, or to capitalists, that would

only prove ruinous to the small capitalist and laborer. When labor exceeds the demand in the market, (and when is it not so,) the nation should propose a scale of wages, lest the poor be unfairly paid by representatives of property; because the old story that wages adjust themselves according to the law of supply and demand, does not equally press upon the capitalist and the laborer; for during temporary stagnation of business, the capitalist has his income only temporarily suspended, with little personal inconvenience, whilst to the laborer, the suspension is starvation, disease, or death, or degradation to himself, by applying for parish relief; an alternative for which the nation should provide, by laws on the property of the nation, (not of the parish or county) a means of subsistence for every able working man.

In Ireland, and many places in this country, the supply and demand of labor is disastrously unequal, and the poor need the protection of the legislature; and even parishes need protection, since some are most unequally assessed; large capitalists reside in lodgings, neither employ laborers, or contribute to the support of the poor, who consequently must be unfairly maintained by the industrious small capitalists, tradesmen, farmers, &c. In other parishes, the manufacturers draw many hands from the adjoining parishes, and throw them back on their own parishes, when injured in power or health, or from a change or suspension of business. Many other facts may be adduced relative to the inequality of levying poor rates, and in support of a national tax levied, like the property and income tax, for the employment and support of the poor, in the same manner as the army and navy are supported, at a certain rate. The national contract with the employed should be fixed, and always below the rate of wages between the employed and the employer; yet always sufficient to supply the necessities of the employed.

Now that government has admitted that the supply and demand of labor are unequal, and have advanced money to employ the Irish laborers, why not extend the principle to our own laborers in poor districts, and fix the minimum of reward for every laborer when engaged by the nation, and the public; the rate of wages with the latter should be higher than with the nation, in order that the employed and the employer should seek one another's mutual advantages.

Proprietors or representatives of landed property who receive low rent for badly or non-cultivated land, moors, &c., might with justice to themselves and to the community be enforced, by an act of parliament, to expend a certain sum of money per acre, annually, borrowed from Government if required, on certain terms, for the sake of bringing the land into a state of productiveness to feed and employ the people. Such a law would soon alter the condition of the whole country, and particularly that of the productive and thereby all other classes. Land should not be allowed to remain unproductive whilst labor is seeking for employment; neither should it be partially or ill-cultivated and allowed to remain so, as we observe it is more or less

in every part of the country, particularly that belonging to the Church, to estates in Chancery, or those belonging to absentees, or trustees, or entailed estates, or estates belonging to persons having only a life interest therein. Landed property thus circumstanced is seldom properly managed; all take from the land as much as they can until it becomes useless, neither yielding produce or employment to the operatives. Representatives of property, tenants, workmen, and tradesmen, would benefit by such a compulsory law to make the most of the land, and at the same time proprietors and capitalists would be conforming with the duties of property to the community. A landed proprietor is bound not to allow his land to be idle, but to work it to the advantage, first of the productive classes, the poor of the parish, for state necessities, and lastly for his own improvement.

Government may make laws to protect laborers from being employed at a price below remuneration, to support themselves and families, since labor is unquestionably greater than the demand for it in the market. Cheapness is now the general cry for every thing: the purchaser solicits it from the shop-keeper, and the latter from the manufacturer, who first lessens the workmen's wages, whilst he and the shop-keeper keep up their profits, and the poor man suffers by accepting less for his labor (rather than go to the union), than is possible to live upon, in health with a wife and family, say 7s. or 10s. a week to pay for lodgings, clothes, food, fire, &c., averaging in many instances only a shilling each a week. Now the average weekly expense of a pauper in a union is 2s. 8d. without including house or fire expenses; consequently the weavers, agricultural laborers, and others, had much better go to the unions at once than starve on diminished wages, until the nation shall make laws by which they may work, *i. e.* to protest against the selfishness of some employers, and preserve the operatives from recklessness, immorality, disease, improvidence, premature marriages, and frequently death, circumstances that attend poverty arising from want of occupation, or insufficient wages.

Much benefit we conceive must arise by government superintending directly the interests of the people, at the same time educating their children so that they may perform their relative duties in after life. The girls should be taught the preparatory duties of women; not the romance, but the breathing reality of fire-side companions; and while we have the maiden preparing to impart an increase of loveliness by mental acquirements, we must not neglect the requisite knowledge of the duties of a wife and a mother, to which honorable distinctions all are naturally intended: and as our first and last attendant in our helplessness, their education should be subservient to the kindly duties of the sick chamber, "smoothing the pillow of pain, commending and administering the medicated means to assuage it, and the parched lip of the distressed sufferer," in short to

"Show us how divine a thing
A woman may be made."

These ostensible duties of a woman are too often neglected in the superior and even in the middle classes of society, because the accomplishments for the drawing-room that draw the applause of friends and the casual acquaintance engage all their attention, yet it totally fails in the sick-room, to draw the more estimable applause of her husband, family, or sympathizing friends. When poor men are not in regular work, and only earn an occasional pittance, they are forced to send their wives and children to eke out the means of a miserable subsistence, and sacrifice the usual meagre education of their children. The teaching of the girls should be, preparatory to a virtuous, frugal, and well-ordered life, for the duties of wives and mothers, the central joy and love of their husbands and children.

Fortunately the condition of the poor and the operatives has attracted the attention of all serious observers, until it has become the great question of the day. Mr. M'Culloch in his late able work on Taxation and Funding, admits that the situation of the poor is growing gradually worse. "Though there has," says he, "been a vast increase of production, and of wealth and comforts, among the upper classes engaged in business, during the last twenty or thirty years, and a considerable diminution of taxation, the condition of the work people during that period has certainly not been in any degree improved, but has rather, we incline to think, been sensibly deteriorated?" Wealth has also unfortunately separated its possessors from the working people, and even from the respectable classes, particularly those who have suddenly acquired it in the commercial or manufacturing world or otherwise, from a mistaken impression of the habits of families who have inherited distinctions, importance, and respect. It becomes an important duty of an English statesman to watch over the welfare of this vast and helpless body; and he who utterly disbelieves in any power possessed by the higher classes, or by individuals to alter and improve, by human effort, the economical arrangements of society, may nevertheless allow that the state has a minor but still serviceable function to perform, by shifting the burdens it imposes, and make them rest on the shoulders of those who, it is conceded, have made greater advances in material prosperity than the mass of the people.

Mr. M'Culloch has endeavored to prove, that direct taxes upon capital is no more beneficial to laborers than indirect taxes upon necessaries of life, because it reduces the means of the capitalist to employ workmen. Now it does appear to us that the capitalist with land or machinery, must be very dull who cannot employ a man to produce him more money than is paid for his labor, or keeping him at a certain expense doing nothing in an union.

Thus it appears unquestionable that the *Times* is correct in thus writing:—

"That, under the system of indirect taxation which prevails in our country, the poorer classes contribute in reality much more to the revenue, in proportion to their means, than the rich. The taxes on tea, sugar, and soap alone, amount to nearly a fifth of its whole public income. To these must be added the enormously productive duties on

beer, spirits, and tobacco—the luxuries, whatever moralists may urge respecting them, of the poor. We are not aware that any statistician has endeavored to show how large a proportion of the earnings of a laboring family, say at twenty shillings per week, goes in the shape of duty on commodities; but we should imagine that it very far exceeds the proportion contributed by the possessor of £1000 per annum, in landed or funded property."

By removing indirect taxes on the necessaries of life, the work people must necessarily be more constantly employed, better fed, and in better health to support their family with abundance of the comforts of life as regards superior food, clothing, and habitation. Thus the poor and county rates must be lessened in supporting them in the unions or in prisons. Offenders against the laws are always more common when employment is scarce, and food inferior in quality or in quantity, tending to render the mind morose and disposed to crime. Instead then of these dire consequences, the people would be all employed in adding to their own wealth as well as to that of the nation, and propagate healthy offspring in wedlock, and not illegitimate children to be neglected morally and physically.

Death amongst the working people always quickly follows a rise in the price of corn. A working man at first endeavors to do with less of it, and his health soon fails him, and diminishes his productive energies, and his value as a machine, hence the taxes should be borne by the employers in order to keep the producers in working order for their necessary purposes and interest. It is bad policy to allow the burden of indirect taxation to fall on the shoulders of the productive class; since labor is the chief foundation of national wealth, the necessaries of life should be cheap and abundant to secure health for the people. Dr. Adam Smith was of opinion that the working classes contributed nothing of consequence to the revenue. Mr. M'Culloch also seems to support this theory as well as many political economists. This important question is not settled definitely, although it is one of the most important questions which statesmen can have to consider, to ascertain whether the condition of that class can be ameliorated by altering the *incidence* of taxation; whether direct impositions on the holders of property can be substituted for customs and excise duties with any advantage to the mass of the people. We have never had in this country a trial of the burden of taxation being off the shoulders of the poorer upon the wealthier members of the community; to say the least of the experiment it is high time to try it, if but for the sake of a change and fair play towards the poor.

To fear the common reason adduced against the plan, *i.e.* that it may reduce the means of employers or capitalists to employ producers, in our opinion is a perfect fallacy.

It appears to us that property and income taxes may be fairly assessed, and advantageously substituted for much indirect taxation upon the necessaries of life. The present mode of charging incomes arising from real property, upon the same scale without reference to the different classes of incomes derived from professions

and trades is unjust and oppressive, and therefore impolitic in the very highest degree. An income from real property is more or less certain and continuous, but that arising from professions and trade is most uncertain, whilst the death of a professional man annihilates at once the income. In common justice all must admit that the income arising from professions and trades ought to be taxed at a lower rate than that derived from absolute property. The fact is simply an abuse of power—the violation by the strong of the rights of the weak, for there cannot be a clearer right in civil society than that of bearing no more than an equal share of the public burdens. Therefore this political fault loudly calls to be remedied by the statesmen whose duty it is to make just laws, and watch over the welfare of this vast and comparatively helpless body who live upon professional and trade incomes.

The effect of cheap provision will be, that thousands of house-servants will be additionally employed; families who now keep but one dreadfully over-worked servant girl will keep two, and those who now keep two servants will keep an additional man servant or more, and so on, thereby preventing many cases of illness, and premature death from over-work, or want of employment and food. Although employers of house-servants pay all the indirect taxes upon their food, they are indirectly repaid not only by extra comforts derived from employing more hands, but as a consequence lessen the poor and county rates, benefit trade, and agricultural and manufacturing interest. The true interest of the country consists in the maximum and not in the minimum consumption of the operative classes. The principle is well illustrated in Ireland, there the poor neither benefit the agriculturalist, nor the manufacturer, either of their own or any other country, because, they clothe themselves badly and merely exist, hence, they are poor in health, weak in body, and inefficient in labor.

SECTION XII.

We shall now proceed to make some observations on the advantages to the employers in restricting the hours of business.

We have already pointed out the injurious consequences of physical evils upon the people, which equally affect the employers and the employed, and therefore, the remediable means are common to both. It may be affirmed that it is in every sense, the best interest of the employers to contract the hours of business; their health and lives are thereby saved for the benefit of their families. Observations must have forced conviction to the most careless minds, that it is neither consistent with humanity, nor with the interest of the community, that men should systematically labor, or apply their minds beyond their strength.

Now to investigate this affirmation. If the employer is ill, his business is not carried on with steadiness and alacrity, consequently the profits must be lessened, and the house may, however undeservedly, engender a character for carelessness which may eventually prove disastrous to the owner. The same consequences necessarily attend illness amongst the employed, interruption and delay in the completion of the required operations. It is seldom contemplated that debility of the mind and body may be brought on by want of sleep, as well as by too active physical operations or by protracted mental application, thus engendering a tendency to disease in the frame, or develop into morbid action that for which the constitution had before only a predisposition; for instance, gout, rheumatism, inflammation of some important vital organ, indigestion, nervousness or insanity. Every animal sleeps not less than one third of his time, and most in their natural state somewhat more; even horses are allowed more rest than many shopmen, clerks, artisans, bakers, needlewomen, &c. Indeed it has been proved that but very few human beings can maintain health and energy of mind and body with less than eight hours sleep. "Tired Nature's sweet restorer, balmy sleep." Human beings with restricted rest have their organization retarded, or imperfected.

It has been observed by medical men that persons habituated to restricted sleep, seriously suffer from even slight accidents or diseases frequently proving fatal, whilst persons accustomed to have their regular rest, suffer but little from similar causes. In the London Police Force when the men had alternately to take night and day watch, the sick and death list was very greatly increased above the average customary list of similar age and class of persons in ordinary occupations of life; when the men were appointed to take night and day duty regularly, the number of cases of sickness and death diminished to nearer the common average; persons who sleep in the day and work at night are always pale and weak in health for want of solar light, and die sooner than persons who work in the day.

Want of sufficient sleep with or without undue physical or mental application to business renders the mind morose and irritable, inimical to please and serve in retail shops to the mutual satisfaction of the employer and buyer. Sellers whose business brings them in personal contact with customers should be active in body and mind, and obliging—a condition that cannot exist when the powers are debilitated by protracted engagements, thus the employer becomes a loser by his exactions from the employed; and the latter dissatisfied, disobliging, ill, or useless.

Hence the mutual interest of the employer and employed is to condense the hours of business, and economise physical and moral energies. Dr. Arnott in his Elements of Physics has written thus:—

"Animal power is exhausted exactly in proportion to the time during which it is acting, as well as in proportion to the intensity of force exerted; there may often be a great saving of it by doing work quickly,

although with a little more during the time. Suppose two men of equal weight to ascend the same stair, one of whom takes only a minute to reach the top, and the other takes four minutes, it will cost the first little more than a fourth part of the fatigue which it cost the second, because the exhaustion is in proportion to the time during which the muscles are acting. The quick mover may have exerted perhaps one twentieth more force in the first instance to give his body the greater velocity, which was afterwards continued, but the slow supported his load four times as long."

Exhausted physical and moral powers of man are necessarily inimical to the highest sources of gratification; exercise of the reflecting faculties, is the distinctive character of a rational creature, which leads him to the main object of his being, obedience to God; and which discovers in the objects and ideas around him, a beautifully arranged scheme for his gratification.

Time and assiduity are necessary to exercise the reflective faculties ere the moral feelings can subdue the primarily developed animal passions, which tend to retain man, selfish, sensual, superstitious, and uncivilized.

A man too much occupied longs for and talks of ease and retirement after accomplishing the saving of a certain sum of money. Frequently ere he accomplishes his grand project of life, he loses his health or life, or if successful he is often wretched for want of his ordinary physical occupation, not having habituated himself to mental culture or recreation. The pleasure of relaxation is nevertheless only known to those who, having a regular interesting employment, habituate themselves to the mental recreation of reflection. Continued relaxation soon becomes a weariness; on this ground, we may safely assert that the greatest degree of real enjoyment belongs, not to the luxurious man of wealth or to the listless votary of fashion, but to the middle classes of society, who with the comforts of life, have constant and successful occupation; whilst a toilsome, anxious, barely remunerating or unsuccessful business together with a severe regimen, tends to give sadness to the spirits and to abridge life.

The true interest of the employer is to obtain well-informed assistants, and to treat them well, giving them leisure to recruit their mind and body.

Employers who board and lodge their employed should make a comfortable home for them, both for the sake of their duty and their interest, inasmuch as dirty, ill-ventilated dwellings, and coarse food render the mind (of even the well ordered, before exposure to such contaminating causes) vitiated and morose, thereby injuring the interest of the employer by their ungainly, rude, and inattentive behaviour to the customers.

Obliging manners are indispensable in obtaining and retaining a retail trade: such courteous attention when long continued, is a very laborious mental and bodily combination of action even to the most amiable and affable, and still much more so to the tutored and practical polite server. Therefore such indispensable qualities real or assumed, cannot be expected from men who are harshly or indif-

ferently treated by their employers, or fatigued. Considerate employers will retain valuable assistants as it is their interest; whilst the inconsiderate can have no chance of obtaining such men, consequently they must supply their wants from the best of the worst.

The folly of keeping young people standing in the shops, whether they have anything to do or not, to make an empty show of business, and oblige them to weary themselves frivolously, is in the highest degree cruel. Why not allow them to sit down and read, either in the shop or in an adjoining room, as it is the custom in France?

Young people thus treated reserve their energies to do the business better when it is to be done, for the interest of the employer, and at the same time acquire knowledge to improve their intelligence, and converse with one another, friends, and acquaintances, and be more worthy, and better prepared for the society of the cultivated and the virtuous. At present they are debarred by the lateness of the hour in closing the day's business, from visiting respectable acquaintances; therefore they are driven to take a walk in the streets, when the virtuous and well-regulated people are at home; they are left without restraint to the temptation of the vicious portion of society. Such a life soon engenders disease of body and mind, terminating often in a premature unhallowed grave, unregretted, as in life unrespected.

A serious duty devolves on the public to put a stop to this lamentable evil, by making their purchases during early hours; and all employers should allow their domestics to go out in the day time to make their purchases, more particularly their women servants, rather than subject them to the temptations of the night. Evening shopping and errands have been the means of leading thousands and tens of thousands of poor girls into an irretrievable vortex of iniquity. Employers, therefore, should refrain from exposing their female domestics to temptation, and to deal with the dishonest tradesman, who too often keeps his shop open only to catch the late customer, the servant woman, upon whom he imposes his inferior and faded goods and cheats her of her hard-earned wages.

Interest, duty, and the best feelings of nature, alike prompt the employers to sanction and aid the contraction of the hours of business. At Liverpool, Manchester, and several other places, manufacturers and shop-keepers have tested the plan of contracting the hours of business, and all have found that the amount of business was not thereby diminished; but on the contrary, had much satisfaction in commending the system for general adoption, since they found that they obtained that assistance from their employed that money could not buy, viz., probity, together with courteous manners, willingness and determination to attend to their interest.

Assistants when they find that employers give the preference to the best informed and most moral, will strive to use their leisure in improving themselves by reading and by attending lectures, &c., rather than fall with the most worthless, whose best chance of em-

ployment is to obtain a situation with persons who work and treat them like slaves, or to sink still lower in the scale of society.

Some employers who are not well informed upon these subjects, ungenerous, grasping, or suspicious, assert that to grant extra leisure to the rising generation is only to request them to help themselves out of the till with the means of gratifying their lax or iniquitous propensities. We have not much hopes that our adduced reasons will either be read by or convince such; but let them see how thronged are the few public places that we have for lectures on different sciences, reading rooms, &c., by both young and old who can attend them. It is an undoubted fact that want of time is the only reason why the employed and the productive classes do not more generally attend lectures: also that we have but few theatres for public lectures on the different branches of the sciences. It is, however, gratifying to observe that public libraries are now much more numerous than formerly, and are gradually increasing in the country towns, a satisfactory attestation that the public taste for mental culture is in the right track. Government should encourage the taste by throwing open the British Museum and all similar institutions on Sundays as well as every other day in the week; and probably an extra holiday or a part of one would be advantageous to the community, for no one can suppose that less business is done in a week, because Sunday is a day of rest, the Jews manage to transact their business successfully in five working days.

However, the better plan would be to allow or enact, that all the employed be liberated after eight or ten hours application. Thus the health and life of the employers and employed would be saved, rather than be sacrificed as it is now to a most lamentable extent, in consequence of the daily protracted anxious toil of business. Purchasers would not buy less because the hours of business are confined within day-light: no one supposes that Bankers do less business, because they close from 3 to 5 o'clock in the afternoon, although, doubtless, the same business would be lazily continued until 10 or 11 o'clock were the proprietors inconsiderate enough to allow it. The public would readily accommodate themselves to these new arrangements of business, and make a virtue of necessity. Some employers fallaciously argue that since they pay for the whole time of their employed, that they have a right and interest in a protracted employment of it; secondly, that since the employed frequently prove dishonest with limited leisure, they would prove still more so with increased time on their hands for recreation; and thirdly, that a superior education would make them too proud and discontented with their situation, and more expensive in their habits, and prone to supply by robbery the means of gratifying their desires.

As to the first objection we need only remark that no man is justified in exacting from his employed, that service which will injure health, and we have endeavored to prove that it is not the best interest of the employers to exact undue physical or mental service from their employed: with regard to the second objection, above all

it is a prejudiced reason, we have also considered, and trust proved its nullity as to its general effect. Some men, however, will be found to stray into an erring path, in spite of every advantage held out to them, still that is no reason why those who are far otherwise inclined, should be debarred from opportunities of education or of improvement, which is the only sure remedy to frustrate an evil tendency, since the gratification derived from mental culture is of all others the most absorbing, the most durable and cheap, bringing within its train, many more happy results than even sensual indulgences bring evils. Hence reciprocity of honest purposes must inevitably prove a mutual advantage to the employer and the employed, whilst it eradicates ignorance, a mighty evil, and social misery.

With regard to the third objection, we need only refer to the already transcribed Manchester Police report, wherein it is clear that educated delinquents bear a very small proportion to the uneducated. Indeed, the police reports throughout the country testify that the best educated and well informed are incomparably more trust-worthy than those who are not educated at all, or but little more. Knowledge gains self-respect, it is a pledge for honorable integrity, and generally for amiable and gentle manners.

One of Napoleon's maxims in war, was to regard the moral as compared to physical force on the ratio of three to one. This view may be allowed to hold good in a greater proportion in respect to the duties of civilians; and the following quotations will illustrate the advantage of tuition, written by Mr. Marshall, on education of soldiers.

"Men who are taught are more apt to understand what is said to them, are more decorous, respectful and conscientious, more attentive to order, more ready to see and acknowledge the propriety of good regulations, more disposed to shun low company, and less inclined to inebriety than persons who have received no education."

From Mr. Marshall's work, the following views are principally collected.

The good effect of education is well illustrated amongst the Royal Sappers and Miners, and the Artillery-men, who are without exception the most respectable, well conducted, efficient, and moral body of men in the British Army. These men enlist from the same classes as supply our Infantry and Cavalry: education is not efficiently granted to the two latter branches of the army, but the men who join the Royal Sappers and Artillery service are at once sent to school, even to learn their letters, and then gradually advanced in their studies, until they acquire the requisite knowledge to discharge efficiently their duties. Some of the men continue their studies and become deeply read in mathematics as a labor of love, and all are first-rate soldiers, intelligent and well-informed, with becoming pride and self-respect as not to sink into the condition of a blackguard. There are a few it is true, who fall in this manner, but they are the exception, and the rule is greatly in favor of the men, unlike the neglected and ignorant men of the infantry and cavalry departments of the army, amongst whom crime and low habits are more common than in any

other army in the world, and amongst whom it is very difficult to select good non-commissioned officers!

To prevent degrading evils and unnecessary expense to the country, the men in every regiment should be efficiently taught as the Royal Sappers and Artillery men.

The more the mind is cultivated, the fitter a man becomes for every situation in life. When a general national system of educating the people is fixed upon and a law made to compel all classes to educate their children, all will become more gentle, merciful, and just in their transactions. Formerly when education was less general than it is now, our laws were horridly sanguine, the people were shot, hung, flogged, or imprisoned, soldiers and sailors were regarded as mere machines, and treated like dogs by the brutalizing cat-o-nine-tails. Hence crime and drunkenness were greater in our country than in any other in the world. Formerly it was thought that the people could only be kept honest, moral, and satisfied in their condition, by being retained in ignorance and in terror of the dreadful retribution awarded to crime. In the army and the navy it is authenticated, that since the diminution of whipping, and scourging, and other degrading punishments, there has been an increase in the moral elevation and good conduct of the men. In civil life, kind and considerate attention to the interest of the poor will assuredly likewise be productive of good. It is statistically proved that education lessens crime in every country, because it is a process of acquiring a knowledge of ourselves, and of forming habits of activity, so as to qualify us to perform our parts in life with intelligence and probity, whilst the neglect of educating the people has the reverse effect, as the following return for last year, of persons taken into custody, will prove: of the 59,123 prisoners, 15,253 could neither read nor write, 39,659 could read only, and some write imperfectly, *i.e.* not educated at all, only having commenced the task.

Mr. Marshall observes that the very marked superiority of the Royal Sappers and Miners, in intelligence, and moral and general manners over the soldiers in the line, is not to be attributed to their extra pay, for that abstractedly would only enable them to be more drunken and vicious, but to the system of education adopted for the men, and to the very superior acquirements of their officers, who must have received very liberal preliminary education in the sciences and literature, and tested by strict examination before they are placed on the list of eligible candidates for commission. In the line the greatest noodle with money may purchase a commission very important in rank, which ought not to be allowed, since the moral influence of the officers in the artillery, and their superior intelligence and habits is in some degree communicated as it were by reflection to the non-commissioned officers and men. The fact that the best officers and privates are the educated men, is a satisfactory proof of the moral influence of education, and of the important duty incumbent on the nation to impart it. In Germany and America, the men in the army and the navy are properly educated, during their term of

service: and if our men were so treated some would after disbandment with their well-trained habits of order, be able to superintend the national schools and public works, thus the army would be a training school for civil life, and at the same time eradicate in the people that dislike to military life rather than as now, vitiate the people when disbanded. A well educated, intelligent, moral, and steady disbanded soldier would be an acquisition to superintend, and keep order amongst paupers and criminals engaged by the state as already suggested to subdue and recover unproductive land, and to colonise them on it afterwards.

It is probable, ere long, that labor may, like any other marketable commodity, be transferred from country to country, as it may be demanded; we know that many English excavators have lately passed over to France, to construct rail-roads, &c., with much advantage to both interested parties; other countries will doubtless require similar aid.

It is highly gratifying, that science has of late suggested an economical means (by a steam communication) and by electric telegraphs tending to universal peace, and to moral and social advantages over the world. Electric telegraphs are now in rapid construction along all main lines of railways, and will doubtless, ere long connect all nations with one another, to communicate their general and local wants in politics and commerce, through these wonderful instruments, now tested and proved even practicable as sub-marine conductors.

Business will be transacted over the world with the same facility and speed, as if the people were in one town; and thus engender and develop reciprocal feelings and good-will towards all men: which have now scarcely existence. Once in the enjoyment of such privileges as these, it will be very improbable, or as impossible to lead nations to disruption, as it would now be, to cause civil war in England. It is most certain, that the tendency to war, always diminishes in proportion as nations experience the advantages of peace and commerce; for they unite countries in closer friendship, and regard for mutual advantages to transact their important commissions. It may be interesting to many, to know at what speed electricity travels through wires, used in making signals by electric telegraphs, since it is impossible for the mind to conceive the rapidity; the following calculation by Professor Wheatstone, of comparative speed, is transcribed from a Lecture published in the Medical Gazette, on the 3rd of July, 1846, delivered by Professor Faraday, at the Royal Institution. "In running, a man passes 4 feet in a second, a race-horse 40, a hare 88, the strongest wind 82, sound 1038, a 24 pounder from a cannon's mouth 1300, light 192,000 miles per second, but electricity 288,000 miles per second," *i. e.* at the rate of 12 times round the earth in a second; or three times, whilst a man makes a single hasty step. Such is the beauty of he manifestation that comes before us, when we deal with great laws of nature, and observe phenomena which never fail, because the Creator governs by

fixed laws. He has permitted us to examine them, and admire their effects, and make provisions for their application to purposes useful to man."

These and other grand discoveries, which the Almighty has placed within the mental grasp of his people, can only be fully available to the mass, by tutoring the mind at an early age of childhood, to habits of reflection, in order to comprehend in a maturer age its intricate details. Education is as essential to the humble mechanic, as it is to the commercial capitalist, to his clerks, and, indeed, to the humblest employed; it is an advantage, that cannot be dispensed, without loss to him, and even to the nation, since an imperfect integral duty is a loss to all.

To every class of employed, education is an immediate advantage, for it is well known that the educated are always selected, in preference to ignorant men, by the proprietors of superior establishments to superintend important operations and departments of trust. In some establishments, the assistants are generally relieved at comparatively early hours of business, consequently they are at leisure, early in the afternoon, yet they do not disgrace themselves by intemperance and immoral conduct, but on the contrary, are far superior to those engaged in business to late hours, because condensation of pleasure within a very limited time is generally riot; consequently they become incapable of elegant pursuits, polite amusements, or harmless recreation.

A moral character is generally founded upon intelligence, and conviction of the propriety of observing religious duties. Since religion, morality, and intelligence are requisite combinations in the formation of the noblest work of God—an honest man, it must be evident, that to improve, perfect, and exalt his condition, time must be granted for mental culture, and social habits, particularly to those who may be married, (unfortunately a very small proportion of the employed) in order that they may enjoy the society of their chosen partners for life, and teach their children the way they should go, and make each member of the circle feel the real happiness of home. Without any inconvenience, the public may refrain from patronizing employers in every way of business, who continue the late system, since all are directly or indirectly equally interested in the moral advantages that must follow.

In every relative position that we may hold in the social circle, the following advice of Burke's should be remembered: "Moderation, gentleness, a little indulgence to others, and a great deal of distrust of ourselves; which are not qualities of a mean spirit, as some may possibly think them, but virtues of a great and noble kind, and such as dignify our nature as much as they contribute to our repose and fortune."

Competition and struggles in business excite the passions, and give rise frequently to brilliant display of energy and intelligence, often to be admired, but in a great number of such persons, shew, that such passions have no tendency to soften the heart, or to generate a

more compassionate feeling to the interest and condition of their neighbors, dependents, and the poor; sacred and moral duties, that encompass us all, and for the partial, or habitual non-performance of aiding and commiserating the proper objects, we are all awfully to answer before God.

It is the legitimate duty of the nation, to make laws to relieve misery, dependent upon poverty, and of every citizen to seek the poor in the obscure places, where they may be too often found unheard, and unseen, and left to die. Money ought only be given to relieve immediate necessity, and employment should be found for all the destitute according to their capabilities.

The best charity, be it legislative (which it ought to be to serve every condition,) or private, is that which exerts itself for those who cannot act for themselves, to prevent physical or moral distress.

It is now, as it ever has been, a duty of every man to exert himself to obtain legislative justice for the poor, and amelioration of the condition of the producers and dependents, without further fatal delay, I say fatal, because hundreds are daily dying, directly or indirectly, for want of sanative regulations and the comforts of life. Therefore, there can be no subject of greater importance to engage our legislators, than this momentous question, since so much the larger proportion of the population are to be benefitted directly by it, and all indirectly.

The expenses of the poor throughout the nation, should be levied on property and income, to equalize the burden on all capable of paying direct tax, instead as now in parishes alone, upon houses varying in amount from three-pence to several shillings in the pound, upon the rental; thus we may find a parish in the City of London, paying only three or four pounds annually towards the support of the poor, upon the rental of eighty pounds a year; and in Spitalfields close by, about twenty-five on the same rental of a house! Similar facts may be found in agricultural districts, whose poor leave for engagements in some manufacturing town. Again we can readily point out persons clearing by their manufacturing business, from one to thirty thousand a year, contributing less possibly, or little more than a rack-rented farmer in the same parish, upon two or three hundred acres, barely clearing his expenses, partly in consequence of the manufacturers inducing strangers to come, and finally obtain a settlement in the parish. I am acquainted with a gentleman living on a second and third floor, paying thirty pounds a year, having a private income of £1500 a year; and another living and carrying on business on a first floor, paying forty-five pounds a year, and clearing about £2,000 annually; neither of whom directly pay a shilling towards the support of the poor in their respective parishes, whilst their stinted landlords have to pay annually, about ten or fifteen pounds a piece: without administering equal justice, and cares of governance of all classes, the stability of indivisible union of the kingdom cannot be effected. The next care of the nation should be, to observe and favor whatever raises the civilization of

the people at large, by particularly accustoming them to require a higher standard of subsistence, comforts, taste, and enjoyments; for the principle affords of itself the means of satisfying the wants which it engenders. The Irish being a poor neighboring country is a serious loss to this country, and the poor mode of living of the peasantry dependent on their potato crop is also a deplorable circumstance to themselves; since they must in their variable climate be frequently subjected to famine, or a straightened condition for food: their miserable mode of dress is a serious drawback to their native manufactures, and to the manufactures of their neighboring countries, by not eliciting reciprocal commerce, and consequently a more rapid diffusion of active, enlightened, and liberal enterprising feelings. A low, cunning, suspicious, wrangling, self-sufficient, bigotted disposition is common to all isolated, semi-civilized, uncommercial people.

Hence, influence like that of O'Connell, and others, who thrive, with the rapacity of cormorants, and which can only be destroyed by employing and infusing into the people, education, habits of industry, and social order, and by the strong hand of the law giving them ample protection to life and property. Thus the confidence of the capitalist will be obtained, to invest his property and employ the people, and wean them from designing men, who parasitically wallow in wealth and luxuries, wrung from the ignorant poor by duplicity, inflammatory appeals, and arrogant promises.

Civilization and Christianity are undoubtedly more rapidly disseminated by commerce than by any other known means. We find that the Chinese and other people that have had scarcely any intercourse with other nations are stationary, if not retrograding in moral culture and intelligence. Polite manners are best attained by an intercourse with a civilized and commercial people. The knowledge of isolated people must be very confined, their capacity for improvement very moderate, and their manners and behaviour are consonant, rude, unpolished, irreligious, or idolatrous. Amongst rude, isolated people, the simple purity of spiritual worship cannot be comprehended: hence we find that the pompous demonstration of the rites of certain churches strike their dull senses more readily than the simple spiritual form of others, and render them dogmatical and intolerant, exemplified even in the present ages: at Porto Rico the Spanish authorities will not allow a protestant to reside amongst them. Dr. D. M'Connell Reid has published in the *Medical Times*, Oct. 3rd., 1846, his case; after paying £200 for his licenses to practise his profession throughout the Spanish dominions, he was obliged to leave unless he became "domiciled," *i. e.*, swearing that one is a Roman Catholic: in no part of the world do the Protestants act thus to the Catholics. We are acquainted with a Catholic who ere he was allowed to remain there as a clerk, was obliged to get his brother in London to obtain a certificate from his priest that he was brought up in the Catholic faith, which cost his brother about £5. Such is the intolerant spirit of the Catholic church, not only at Porto Rico, but at all the Spanish islands.

In every community there ought to be a time set for relaxation and agreeable amusements, because if innocent amusements are not furnished, resort will be had to criminal indulgence. Man was never solely intended for

> "Long, long labor, little rest,
> Still to toil, to be oppress'd."

but was made to enjoy himself as well as to labor.

Men drink to excess very often to shake off depression, or to satisfy a restless thirst for excitement to overcome the effect of labor, little food, and impure air. Morbid feelings are excluded in a cheerful community. Southey writes that—

"Festivals when duly observed, attach men to the civil and religious institutions of their country; it is an evil therefore, when they fall into disuse. For the same reason the loss of local observances is to be regretted; who is there that does not remember their effect upon himself in early life."

Long may the customary sports of the natives of different places be continued in all towns on spots set aside in our parks, or in open places provided by the nation for their use, thus the quiet visitors would not be annoyed or perilled, and the people would be enticed from public houses, or lounging in confined, close houses.

The influence of the arts exercises a moral advantage upon the people, by supplying objects interesting to the imagination, or causes it to reflect, and appeals to the sympathy, and by the decorative character they please the eye, and serve as a record, (particularly sculpture) of the intellectual condition of the nations in former ages. The sculptured works of some nations some hundreds of years ago, nay, long before the time of Moses or of any written record of time handed down to us, are now the only index of the progress or degree of their civilization, wholesome examples, and lessons to improve upon.

Whatever power of mind God has given to any of his creatures, doubtless they ought to use it, but unfortunately many are so circumstanced as not to be able to spare time from physical application to apply their minds to their best interest. or to the advantage of the public. Therefore it becomes an incumbent duty upon those commanding leisure and pecuniary resources, to do all they can to enable persons so circumstanced to use their mental powers to their own advantage as well as that of their fellow-creatures by example. Man is a progressive being. His wants and views are continually varying in degree or quality, yet always tending towards securing for the future an appropriate condition in which he may be happy, but what he conceives to-day to be a condition in which he may be happy, is entirely altered ere or when it is grasped; the mind is soon satiated, and readily rests upon another desire, thus by virtue of his superior organization his enjoyments are much higher and more varied than those of the lower animals.

With the following advice from the "Vestiges of Creation" we

conclude our humble efforts to remedy the evils attending the life of the people, and to interest the general reader in the cause.

"To secure the immediate means of happiness it would seem to be necessary for men first to study with care the constitution of nature; and secondly, to accommodate them to that constitution, so as to obtain all the realizable advantages from acting conformably to it, and to avoid all likely evils from disregarding it. It will be of no use to sit down and expect that things are to operate of their own accord, or through the direction of a partial Deity, for our benefit; equally so were it to expose ourselves to palpable dangers, under the notion that we shall, for some reason, have a dispensation or exemption from them; we must endeavor so to place ourselves, and so to act, that the arrangements which Providence has made impartial for all, may be in our favor, and not against us; such are the only means by which we can obtain good and avoid evil here below. And in doing this it is especially necessary that care be taken to avoid interfering with the like efforts of other men, beyond what may have been agreed upon by the mass as necessary for the general good. Such interferences, tending in any way to injure the body, property, or peace of a neighbor, or to the injury of society in general, tend very much to reflect upon ourselves through the reaction which they produce in the feelings of our neighbor and of society, and also the offence which they give to our own conscientiousness and benevolence. On the other hand, when we endeavor to promote the efforts of our fellow-creatures to attain happiness, we produce a reaction of the contrary kind, the tendency of which is towards our benefit. The one course of action tends to the injury, the other to the benefit of ourselves and others. By the one course, the general design of the Creator towards his creatures is thwarted, by the other it is favored. And thus we can readily see the most substantial grounds for regarding all moral emotions and doings, as divine in their nature and as a means of arising to and communing with God."

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Sir James Clark in his work on the sanatory influence of change of air and climate, thus writes:—

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